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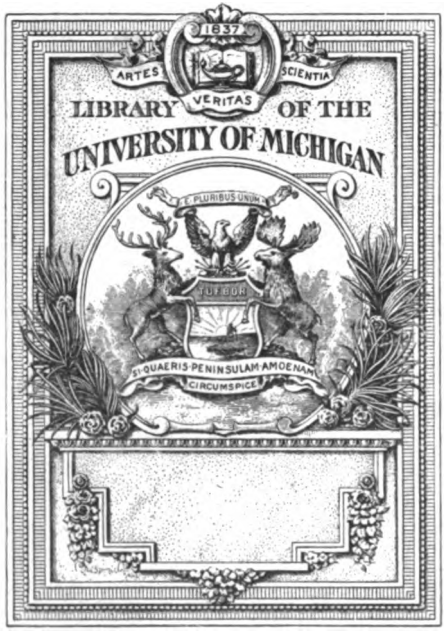

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WAR DEPARTMENT

Annual Reports, 1908

(IN NINE VOLUMES)

Volume VIII

Report of

THE PHILIPPINE COMMISSION

(IN TWO PARTS)

Part II

Reports of

SECRETARY OF THE INTERIOR—
- DIRECTOR OF HEALTH
- CHIEF QUARANTINE OFFICER
- DIRECTOR OF FORESTRY
- DIRECTOR OF BUREAU OF SCIENCE
- DIRECTOR OF LANDS
- DIRECTOR OF AGRICULTURE
- DIRECTOR OF WEATHER BUREAU

SECRETARY OF COMMERCE AND POLICE—
- DIRECTOR OF CONSTABULARY
- SUPERVISING RAILWAY EXPERT
- DIRECTOR OF PUBLIC WORKS
- CONSULTING ARCHITECT
- DIRECTOR OF POSTS
- DIRECTOR OF NAVIGATION
- DIRECTOR OF COAST SURVEYS

SECRETARY OF FINANCE AND JUSTICE—
- ATTORNEY-GENERAL
- TREASURER
- COLLECTOR OF CUSTOMS
- COLLECTOR OF INTERNAL REVENUE

SECRETARY OF PUBLIC INSTRUCTION—
- DIRECTOR OF EDUCATION
- DEAN, PHILIPPINE MEDICAL SCHOOL
- PURCHASING AGENT
- DIRECTOR OF PRISONS
- DIRECTOR OF PRINTING

WASHINGTON
GOVERNMENT PRINTING OFFICE
1909

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The Adjutant-General.
Inspector-General.
Judge-Advocate-General.

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Commissary-General.
Surgeon-General.
Paymaster-General.
Chief of Engineers, Military Affairs.[a]
Chief of Ordnance.[b]
Chief Signal Officer.
Chief of Coast Artillery.
Board of Ordnance and Fortification.

Volume III.....**Division and Department Commanders:**
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2. Gettysburg.
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Volume V.....Chief of Engineers.

Volume VI.....Chief of Ordnance.

Volumes VII–IX.....Insular Affairs, and Philippine Commission.

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[a] Printed in Report of Chief of Engineers, Vol. V.
[b] Printed in Report of Chief of Ordnance, Vol. VI.

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REPORT OF THE SECRETARY OF THE INTERIOR.

62564—WAR 1908—VOL. 8——1

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REPORT OF THE SECRETARY OF THE INTERIOR.

DEPARTMENT OF THE INTERIOR,
Manila, P. I., September 1, 1908.

GENTLEMEN: I have the honor to present the seventh annual report of the operations of the department of the interior, which, unless otherwise expressly stated, covers the year ended June 30, 1908.

INSPECTION OF PROVINCES.

The following is a report on the provinces organized under the special provincial government act.

The provinces of Mindoro, Palawan, and Agusan were inspected during the first quarter of the year just closed, and a statement as to the conditions found was included in the last annual report of this department.

BENGUET.

The inspection of the province of Benguet was made during the presence at Baguio of the Philippine Commission in April, May, and June.

AMBURAYAN, LEPANTO, BONTOC, AND NUEVA VIZCAYA.

As the Philippine Legislature did not adjourn until July 19, 1908, and as there was a bare quorum of the Commission present in the Philippine Islands, it was necessary to delay the inspection trip through Amburayan, Lepanto, Bontoc, and Nueva Vizcaya until that time. Although this delay threw the trip into the midst of the rainy season, it gave time for the completion of important engineering work, which I was anxious to see in a finished state.

AMBURAYAN.

Tagudin, the capital of Amburayan, was reached by sea. A light has just been erected on the coast, marking the position of the town at night, and there seems to be less surf at this point than at Candon, Vigan, or Laoag.

Under the administration of Lieutenant-Governor Evans, the satisfactory conditions which existed among the non-Christian inhabitants of Amburayan have been maintained, while the unhappy dissension which so greatly interfered with the progress of the Christian inhabitants of the subprovince has been ended and conditions are now more favorable than at any time since American occupation. The municipality is improving its public buildings and its highways and is showing a most commendable and progressive spirit, in spite of the recent disastrous failure of its rice crop, due to drought. It has some 5 square miles of rich rice land, which, it is believed, could be irrigated at comparatively small expense with water taken from the Agno River. I have brought this matter to the attention of the

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irrigation committee, and should an irrigation system be constructed Tagudin would harvest two crops of rice per year, and would become one of the most prosperous towns on the west coast of northern Luzon.

THE TAGUDIN TRAIL.

The trail which connects Tagudin with Cervantes was finally completed a few hours before I passed over it, an entirely new location having been made from the crest of Malaya Mountain to the valley of the Abra River. The distance from Tagudin to Cervantes by the new trail is 40 miles. The only two streams of any size which are crossed have been spanned by permanent bridges suitable for heavy-wheeled traffic, and interruption to communication by floods during the rainy season is improbable.

A trip by the old trail to Candon involved the fording of a swift river 13 times, and for considerable periods during the rainy season it was often impossible to get through. The grade of the Tagudin trail is everywhere below 6 per cent and it requires only widening and surfacing to convert it into an excellent carriage road.

The total cost of the trail to date, including maintenance during a rainy season of exceptional severity, has been ₱55,800. In view of the excessively difficult nature of the country which it traverses, I think that it affords a very conclusive demonstration of the satisfactory results which may be achieved in opening up good lines of communication throughout the most rugged mountain regions of northern Luzon.

CONDITIONS IN LEPANTO.

Conditions in the subprovince of Lepanto have continued satisfactory, and, as is usually the case, little has occurred there which calls for special mention. Most of the inhabitants of this subprovince are peaceful, industrious Igorots. Many of them are well to do and own horses and cattle in considerable numbers. The animal industry of the province, which was in a most flourishing state, was seriously threatened by a serious outbreak of anthrax at Bauco. It appears that years ago a similar outbreak occurred and that the animals which died were buried at a considerable depth. Shortly prior to the new outbreak it is stated that peculiar worms, of a kind which had not been seen by the people in the vicinity for many years, appeared in considerable numbers on the surface of the ground and the Igorots believe, perhaps not without reason, that they brought the disease with them. By strenuous efforts on the part of the provincial government and the bureau of agriculture, aided by the effective cooperation of the Igorots of the neighboring towns, who seemed fully to realize the gravity of the menace to their herds, the disease was fortunately confined to the immediate vicinity of the region where it originated, and was ultimately stamped out.

CAUSE OF MALARIA AT CERVANTES ASCERTAINED.

During a period of 5 years, the undersigned has noted the occurrence of a severe outbreak of malarial fever, affecting a large portion of the population of Cervantes, at the beginning of each dry season.

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As the town itself is always quite dry, and is excessively so at this season, it was difficult to see where mosquitoes could breed. With a view to ascertaining this and removing the cause of the trouble, if possible, the bureau of science was this year requested to send an entomologist to make a careful investigation. *Anopheles* was found breeding abundantly in the Abra River. It is a large stream during the rainy season, but shrinks rapidly as the dry season advances, leaving very numerous shallow pools in which the larvæ of *Anopheles* were found in large numbers. Although the river is so far from Cervantes that it had not previously been regarded as a possible source of trouble, there is now good reason to believe that the mosquitoes hatched in its waters are blown into the town in large numbers by the strong northeast winds which prevail at the beginning of the dry season.

Unfortuately the condition is one that can not well be remedied. It would be impossible, at any reasonable cost, to confine the river within narrow limits at this point, and the use of kerosene over such a large area as that occupied by the pools which are left as the dry season advances is hardly practicable.

This is one of several causes which have combined to induce me to recommend the transfer of the capital of the province to Bontoc.

CONDITIONS IN BONTOC.

Upon my arrival at the town of Bontoc, there were found representatives of all but two of the settlements of the subprovince. Approximately 1,000 headmen were present, to say nothing of their several escorts. Included in this number were 10 of the chiefs of Lubuagan, who had brought 400 followers. It is said that only 2 men from this town had ever previously visited Bontoc.

The gathering included representatives of numerous settlements which had long been bitterly hostile, and was most useful in that it resulted in their eating, drinking, and dancing together, and growing friendly. It also afforded an opportunity for the inauguration of the first of what it is hoped may be an annual series of athletic field days which will have an important influence upon public order. While there may seem to be little connection between athletic sports and public order among head-hunters, it must be remembered that head-hunting is regarded by many of those who engage in it in the light of a sport, and serves as an outlet for superfluous animal spirits which might profitably be directed into other channels.

There already exists among the Bontoc Igorots and the Ifugaos a custom of occasionally settling disputes between rancherias by holding wrestling matches instead of by fighting them out, and this fact has been taken advantage of in inaugurating the field days above referred to.

In the present instance there were held running races, lance throwing contests, tugs of war, wrestling matches, and other athletic contests, including several peculiar to these Igorots. There was no lack of contestants; competition was extremely keen, and wild is a mild term to apply to the enthusiasm of the friends of successful contestants, while the losers usually took their discomfiture quite philosophically. The superb physical development which is the rule among these wild men resulted in many very creditable performances.

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It is believed that such field days may be made very important annual events to the wild man and that he will be more willing to forego the excitement of a head-hunt and the feast which follows in the event of success if he is given an opportunity to show his prowess before a crowd far larger than any that would ever witness his exploits in war, and if he realizes at the same time, that by going out on a head-hunt he will lose all chance of participating in the great annual "cañao."

Another advantage of these large gatherings is that it gives the secretary of the interior a chance to meet and confer with all the important chiefs in the region in which they are held. The feasting which accompanies them produces a general feeling of good will, and an exceptionally favorable opportunity is afforded for exerting over the headmen who are assembled a strong influence, which through them ultimately extends to very remote regions.

THE BONTOC EXCHANGE.

The proposed government exchange at Bontoc referred to in the last annual report of the secretary of the interior has been established and has proved a very important factor in promoting friendly relations with the people, in facilitating the construction of public works, and in the maintenance of public order. A small building has been erected in which are kept for sale all of the necessaries and many of the luxuries of the Igorot. They are sold at Manila prices, plus the cost of transportation, plus 20 per cent, and the resulting prices are lower than any of which he has heretofore dreamed. If he desires to sell his lance, his shield, his highly ornamented rattan cap, his smoking pipe, or any other article which would gladden the heart of a curio dealer, he is paid a good price for it in cash. He then has the satisfaction of carrying real money about with him, and he may also experience the joy of spending it for some long coveted and hitherto unattainable article.

Rice, dry grass for mats, hewn lumber, and various other products are also purchased at the exchange by the provincial government, which can readily use or dispose of them. A strong inducement is offered to labor on trails, bridges, and other public works when the laborer knows that without making the long and dangerous trip to the coast he can immediately spend his wages to advantage and can secure what he needs for himself and his family.

Within ten days of the opening of the exchange most of its stock of goods was exhausted, and as the rainy season was at its height some time necessarily elapsed before more could be brought in. Nevertheless, sales have amounted to ₱9,000 in nine months and are rapidly increasing.

Three sides of the small rectangular plaza on which the exchange is situated are surrounded by a long building, divided into stalls in which people from different rancherias may display their wares for sale, and a conveniently situated rest house affords sleeping quarters for visitors from distant settlements.

The Igorots of Bontoc are now themselves demanding that travel on the trails be made and kept safe in order that they may be able to get to the exchange and trade. They are thus becoming directly interested in the maintenance of public order.

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The influence of this exchange has made itself felt even among the Ifugaos of Nueva Vizcaya, and arrangements have been completed for opening a similar concern in their territory. Others will be established in the country of the Kalingas and in Apayao.

The Bontoc Igorots have behaved especially well during the past year and there have been very few cases of head-hunting among them.

THE POLIS MOUNTAIN-QUIANGAN TRAIL.

The trip from Bontoc to Nueva Vizcaya has been made easy by the completion of a fine trail from the top of Polis Mountain to Banaue and Quiangan, a distance of 46 miles. The old trail from the crest of the Polis range to Banaue was excessively bad. There were long stretches over which it was impossible to ride even a native pony, and the trip was possible only to persons who were in good physical condition and accustomed to severe exertion. As there seemed no reason why the thousands of feet of adverse grade on this old trail should not be entirely cut out and a new line surveyed with a grade not exceeding 6 per cent, and as funds were available for the performance of this work, the secretary of the interior ordered it begun in May, 1907, and had the pleasure of inspecting the finished trail in June, 1908. The grade is 4 per cent or less for the greater part of the distance, and a horse may now be ridden at a trot either up or down the mountain. An excellent rest house at the summit affords travelers protection from the cold and dampness, while a stable serves a similar purpose for their horses. The view from the crest of the range is magnificent and the beauty of the tropical vegetation on its eastern slopes is beyond description.

GATHERING OF IFUGAOS AT BANAUE.

At Banaue was assembled what was doubtless the most remarkable gathering of wild men ever brought together in northern Luzon. The Ifugaos of Nueva Vizcaya have been active and fierce head-hunters, and feuds have existed for centuries between their various settlements. The first attempt ever made to bring them together in considerable numbers was at Quiangan during the annual inspection trip of 1907. It resulted so successfully that this year a strong effort was put forth to assemble larger gatherings both at Quiangan and at Banaue. A year ago this would have been impracticable at the latter place, but during the year great progress has been made in establishing friendly feeling between lifelong Ifugao enemies.

This progress is largely due to the courage and tact of Lieut. Jeff D. Gallman, Philippine constabulary, who has tramped ceaselessly over the country, making friends with the well-disposed Ifugaos in their own settlements, and at the same time capturing and turning over to the courts the evildoers.

In building the Polis Mountain trail and the constabulary headquarters at Banaue care was taken to have laborers from hostile rancheries work side by side, and as a result they soon became friends.

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CERTAIN IFUGAOS ATTEMPT TO RESIST GOVERNMENTAL AUTHORITY.

Shortly before my arrival the young men of Lingay killed a Banaue policeman, took his head and his gun, and, encouraged by their success, sent a challenge to Lieutenant Gallman to come with his constabulary soldiers and fight them. They had managed to get together 11 guns, had dismantled their houses, hiding the thatch and boards in the hills, had removed their domestic animals, and had strongly intrenched themselves. When the resulting unpleasantness was over Lieutenant Gallman was in possession of all their 11 guns and had inflicted on them a lesson which will not be forgotten for many years. A few days later their old men came to Banaue to give themselves up and ask for a cessation of hostilities, which was promptly conceded to them. Among the friendly dancers at Banaue we saw a chief who fired some 60 rounds at Lieutenant Gallman and his command during the Lingay fight.

GATHERING OF WILD TRIBES.

The attempt to bring about a general gathering of the Ifugao headmen of northwestern Nueva Vizcaya at Banaue was completely successful, representatives being present from Mayoyao on the Isabela boundary to Asin on the Benguet line.

The delegations, which arrived separately, presented a very imposing appearance as they came marching in, each led by its gansa players and its chief. The fighting men came armed, and the plaza at Banaue bristled throughout the day with their lances, which were immediately stuck in the ground on their arrival, but were promptly seized by their owners as a precautionary measure whenever there was any sign of disturbance in the crowd, which numbered at least 3,000.

The secretary of the interior had an opportunity to meet, for the first time, many of the more redoubtable chiefs of this region and the friendliest relations were established. Furthermore, as at Bontoc, enemies danced together and made friends. With great difficulty 3 carabaos and 2 cows had been secured and a grand feast was given these people, many of whom almost never have an opportunity to taste meat. Presents were distributed among the chiefs who had rendered themselves conspicuous by their loyalty or had been especially helpful in securing labor for trail work and the construction of buildings. At dusk this crowd of armed men, many of whom had been fighting each other a few months before, dispersed peaceably, and no unpleasant incident marred the day.

At Quiangan a still larger gathering was assembled. As that of the previous year at this place had been a success, it was comparatively easy to arrange for a second one. Some 5,000 outsiders were present, not to mention the contingent from Quiangan itself, which was large.

Here, as at Banaue, the gathering broke up without any untoward incident and it was unquestionably extremely useful in promoting friendly relations, both among the people and between them and the authorities. This assemblage of wild men, undoubtedly the largest ever held in the Philippines, was in a large measure made possible by the excellent preliminary work of Lieutenant Mamban, a Filipino constabulary officer stationed at Quiangan, who, while fearlessly performing his duties, has made himself very popular with the Ifugaos

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of that region and during the past year, as the direct result of his friendship with them, has succeeded in persuading them to open up some 50 miles of trail over which horses can be taken.

Both Lieutenant Gallman and Lieutenant Mamban are entitled to great credit for what they have accomplished.

DISBURSEMENT OF THE SPECIAL FUND FOR THE PROMOTION OF FRIENDLY RELATIONS WITH NONCHRISTIAN TRIBES AND THE SUPPRESSION OF HEAD-HUNTING.

The successful holding of the above-described gatherings at Bontoc, Banaue, and Quiangan was made possible through the appropriation by the Commission of a special fund of ₱6,000, expendable in the discretion of the secretary of the interior, for the suppression of head-hunting and the promotion of friendly relations with non-Christian tribes.

When an American official visits an Igorot or Ifugao chief, the latter almost invariably holds a "cañao" or feast in honor of his arrival, and when an American official invites an Igorot or Ifugao chief to visit him it is obviously incumbent upon him to return the compliment, but if he were obliged to supply food and drink for several thousand hungry guests for a period of two or three days at his own expense, these gatherings would necessarily be somewhat burdensome. During the past year the special fund has been used to defray the expense of entertainment at the gatherings of Igorots and Ifugaos at Quiangan, Banaue, Bontoc, and Cervantes, for purchasing presents to be given to chiefs and others who have especially distinguished themselves by their hard work or loyalty during the year, and for paying small salaries to faithful and efficient head-men in settlements which had no funds of their own and which had not advanced sufficiently in social development to render it wise to impose on them any taxes. When it is remembered that the largest salary paid has been ₱6 per month, the fact will be realized that the good will and efficient service obtained have been out of all proportion to the insignificant expense involved.

INSPECTION TRIP TO THE SUBPROVINCE OF APAYAO.

I had expected, in reaching Apayao, to go through Nueva Vizcaya to Echague in Isabela and descend the Rio Grande de Cagayan to Aparri, but this proving impossible, owing to torrential rains which made the trails of Isabela impassable, I returned to Manila and on August 22 sailed for Aparri direct. After running up to the capital of the subprovince of Batanes to deliver messages to the lieutenant-governor, and leaving at a convenient point on the beach a party from the bureau of science which desired to investigate the western mountain region of Cagayan, I proceeded to the mouth of the Abulug River. As the sea was very calm it proved possible to cross the bar and ascend the river to the town of Abulug in the ship's boat.

At this point the baggage was transferred to very light draft native boats known as barangayans, and the party, consisting of Lieutenant-Governor Villamor, of Apayao, Colonel Taylor, director of the fifth constabulary district, Gov. William F. Pack, of Benguet, and the the writer, proceeded up the river.

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The Spanish Government never succeeded in gaining a foothold in the mountain region of Apayao. During the insurrection Lieutenant Gilmore, of the United States Navy, and his fellow-captives were taken into the southern part of it by insurgents and abandoned. Here they were overtaken by the United States troops, which went in pursuit of their captors, and the whole party of Americans finally got through to the coast by descending the river on rafts and in the barangayans of the wild Tinguians.

So far as is known no white man had ever penetrated the northern and central portions of Apayao until the writer, in company with Dr. Paul C. Freer, director of the bureau of science, Señor Blas Villamor, Major Crawford, and Lieutenant Atkins, of the Philippines constabulary, with 25 men and the necessary carriers, started in 1906 from Piddig, in North Ilocos, ascended the western slopes of the Cordillera and descended its eastern slopes to Dalloas, a rancheria near the headwaters of the Abulug River.

From this place the descent of the river was subsequently made on bamboo rafts. The party stopped at all important rancherias and established friendly relations with all natives met. In spite of the unsavory reputation hitherto borne by the wild men of this region, no opposition whatever was encountered.

A few months later Major Crawford undertook an independent constabulary expedition into this country. He was indiscreet enough, when approaching Guenned, to allow enemies of the Guenned people to accompany him, and was in consequence attacked and defeated, which was most unfortunate, as American prestige in this region necessarily suffered seriously.

He subsequently returned with a punitive expedition and was again attacked at the scene of his first skirmish. He finally succeeded in entering an important barrio of Guenned, where he inflicted a limited amount of damage by burning houses and cutting down cocoanut trees.

It is needless to say that these occurrences did not tend to increase the popularity of Americans in Apayao, and as the river immediately in front of Guenned was swift, deep, and so choked with rocks as to make the passage very dangerous, the people of this place were in a position to cut the communications of any force which operated above them.

The original plan of establishing the capital of the subprovince near the center of its mountainous portion was therefore necessarily abandoned for the time being. Señor Blas Villamor was appointed lieutenant-governor and was directed to take station at Tauit, just at a point where the Abulug River leaves the mountains and four hours' travel by boat below Guenned.

The task which confronted him when he proceeded to his post in July, 1907, was one of peculiar difficulty. It was necessary to provide quarters for himself and for a company of constabulary soldiers in a dense forest at a point remote from civilization. The only line of communication with the outside world was afforded by the Abulug River, which can hardly be navigated during the dry season on account of low water and which is swift and dangerous during the rains.

The inhabitants of the country adjacent to the lower portion of this river are for the most part Negritos. They had been abused

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by the Christian natives, and their heads had been diligently sought by the wild Tinguians of the mountains, so that they were always ready to greet strangers with poisoned arrows.

The mountain region was inhabited by the most inveterate head-hunters of northern Luzon. They had never experienced governmental control of any sort, and most of them had never even seen a white man.

As we now ascended the river we found that considerable of rich agricultural land hitherto unoccupied by reason of fear of head-hunters had been cleared and were being cultivated by Ilocanos and Ibanags. The Negritos no longer took to the woods on our approach nor showed any inclination to shoot arrows at us. Having been assured of adequate protection against the head-hunters, they are settling in considerable numbers along the river, are raising a good deal of corn and rice, and in a number of instances have built fairly decent houses, an unprecedented thing for Negritos. We stopped at two of their settlements, and numbers of them came in to greet us.

At Tauit we found a large and comfortable government building, which is used for a residence and office building by the lieutenant-governor and the deputy of the provincial treasurer and for the subprovincial post-office. We also found a well-constructed barrack building, occupied by an exceedingly well-disciplined and efficient constabulary company.

Subsequently we visited the rancherias of Tauit, Burayutan, Guenned, Uaga, and Bolo, and then returned to Abulug, and Aparri.

We took with us, at their request, Bunnad, headman of Guenned, who fought Major Crawford; Unni, chief of a neighboring rancheria; two young men, two boys, and a little girl, who desired to go to Manila. Their friends and neighbors believed that they would never return, and their reappearance will create a sensation which, however, will be insignificant when compared with that which will be produced by their wonderful stories of their experiences while at Manila and on their long journey.

Lieutenant-governor Villamor has established the friendliest relations with the people throughout the greater part of his subprovince, has already gained a strong influence over them, and has used it effectively in completely checking head-hunting raids against the Christian and Negrito inhabitants of the lowlands of Cagayan. Head-hunting expeditions have ceased to go out from Tauit, Burayutan, Guenned, and Uaga, and are rapidly becoming rare in parts of the eastern and central mountain regions of the subprovince.

It is now safe to transfer the capital to Magapta, which occupies a good strategic position at the point of union of the three most important branches of the Abulug River.

A constabulary post will also be established in the near future at Talifugo, where it will be easy to intercept the regular line of march along which the people from the settlements of central Apayao go to attack those of the southern part of the subprovince. It is hoped that within another year instances of head taking will have become rare, although with the inhabitants of this region the occurrence of a death from any cause is considered a reason for the taking of one or more heads, so that the custom will doubtless die hard.

On the other hand, the people of Apayao have many good qualities. They are physically well developed and are quite cleanly.

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They possess a high degree of intelligence. They erect beautifully constructed houses. Their women are well clothed, and both men and women love handsome ornaments. They are quite industrious agriculturists, and are now begging for seed and for domestic animals in order that they may emulate their Christian neighbors in the raising of agricultural products.

Seed and a limited number of animals will be furnished them, and there will be opened for their benefit an exchange where they can market their produce and purchase at moderate cost the commodities which they most need.

It is proposed to expend some ₱3,700 in clearing the Abulug River of dangerous obstructions, at least as far up as Magapta, and to build a trail from that place to Talifugo.

BAGUIO-SUYOC TRAIL.

Reference was made in the last annual report of the Secretary of the Interior to the necessity for a trail connecting Baguio in Benguet with Suyoc in the mineral region of southern Lepanto and following the crest of the mountain range, so as to avoid all rivers and furnish a direct line of communication not liable to interruption during the rainy season. During the past nine months work has been pushed on this trail with great energy, both from the south and the north, and at the present time the two ends are but a few miles apart.

Starting at an altitude of 4,700 feet, this trail rises gradually to a height of 7,200 feet and then as gradually falls to 5,000 feet. It passes above the pine belt and extends for a considerable distance through oak forests in a region where frosts are of nightly occurrence for weeks at a time and where many fruits and vegetables of the temperate zone can be grown to good advantage. The grade is everywhere low, in many places not more than 3 per cent. Side trails give connection between this trail and the Igorot settlements at lower levels, and it is already serving as a main line of communication between the north country and Baguio.

ESTABLISHMENT OF THE MOUNTAIN PROVINCE.

At the close of the fiscal year ended June 30, 1908, the subprovinces of Amburayan, Lepanto, Bontoc, and Kalinga collectively formed the province of Lepanto-Bontoc; the Ifugao country was a part of the province of Nueva Vizcaya, and Apayao was a subprovince of Cagayan.

It had proved impracticable for the governor of Nueva Vizcaya personally to familiarize himself with the conditions throughout the country of the Ifugaos or to spend the necessary time among those people to get into close touch with them and to win the control over them which can be obtained only by personal influence. Lieutenant Gallman of the constabulary was in fact discharging the duties of a lieutenant-governor in this region, with no legal authority to do so, and his transfer to some other part of the archipelago might have resulted in the early undoing of the results of five years of patient work. Furthermore, the opening up of the Polis Mountain trail had brought the Ifugao country into closer touch with Bontoc and with

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Bayombong, the capital of Nueva Vizcaya, and had made it about one-third as expensive to get supplies in from Tagudin by way of Bontoc as by way of Dagupan, Tagudin, and Bayombong. The necessity for frequent journeys to Bayombong was producing disastrous results among the Ifugaos, many of whom sickened and even died as the result of trips into the hot lowlands.

Cervantes had ceased geographically to be a suitable site for the capital of Lepanto-Bontoc, as the growth of the province through the addition of new territory to the north and east had left this place far to one side of the centers of population and of area. It was, moreover, and must necessarily remain, an unhealthful town.

The governor of Lepanto-Bontoc was at the same time in effect the lieutenant-governor of Lepanto, and when he was absent in any other subprovince Lepanto was left without a head. The provincial board of Cagayan was not familiar with the needs of a wild population, and as a result affairs did not always go well in the subprovince of Apayao, while so long as authority in the wild man's territory in northern Luzon was divided between the provincial governors of Benguet, Lepanto-Bontoc, Nueva Vizcaya, and Cagayan, the establishment and perpetuation of a definite and consistent governmental policy in this region was a matter of no little difficulty. Finally the subdivision of this region, where important engineering projects needed to be carried out had resulted in a corresponding subdivision of funds available for such projects and had made it difficult to get enough money together in Benguet and Apayao to allow of pushing rapidly to completion any important public wark.

These difficulties led me to recommend to the Commission the establishment of a province to be known as the "Mountain Province," and to include as separate subprovinces, each with its lieutenant-governor, Benguet, Amburayan, Lepanto, Bontoc, Kalinga, Apayao, and the Ifugao country of Nueva Vizcaya, the latter being coextensive with the former Spanish comandancia of Quiangan. It was further recommended that the capital of the province be at Bontoc, which has a cool and most healthful climate, and is the central point from which the main natural lines of communication radiate.

The Commission approved these recommendations and made them effective by Act No. 1876, passed August 18, 1908.

Under the new arrangement, with a lieutenant-governor constantly present in each subprovince, the governor will be free to go at once to any place where his assistance is needed or where he desires to investigate conditions. He should, and doubtless will, spend the greater part of his time in the saddle traveling over the immense territory which comes under his control. He will be able to establish and carry out a fixed policy throughout the entire extent of this great mountain region, which extends from the southern boundary of Benguet to the extreme northern end of Luzon, and will be sufficiently familiar with conditions in each subprovince, so that in the event of the death, resignation, or removal of a lieutenant-governor he can immediately assume control.

The total funds accruing to the Mountain Province on the basis of its population will be considerable, and will make possible the inauguration and the fairly prompt completion of important improvements, first among which must come the opening of additional lines

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of communication, especially in the subprovinces of Kalinga and Apayao.

It is believed that this reorganization is the most important forward step yet made in establishing law and order and in bringing about a general improvement of conditions throughout the northern mountain region of Luzon.

TRANSFER OF ILONGOT COUNTRY TO NUEVA VIZCAYA.

The territory inhabitated by the Ilongots was in part included within the limits of Nueva Vizcaya, while other parts of it lay in the provinces of Nueva Ecija, Pangasinan, Tayabas, and Isabela. Only in Nueva Vizcaya had any effort been made to bring these very troublesome wards of the government under control and as the four other regions referred to are all contiguous to Nueva Vizcaya, I recommended that they be added to the latter province.

ESTABLISHMENT OF A PRISON AT BONTOC.

Experience having shown that the sending of wild men from the Luzon highlands to Bilibid Prison at Manila was, in most instances, equivalent to a death sentence, I further recommended the establishment of a prison at Bontoc, where prisoners could be confined under what would be to them more normal conditions, and where they could be taught carpentry, basket making, and other useful employments. Both this recommendation and that relative to the transfer of the Ilongot country to Nueva Vizcaya were approved, and were put into effect by the act above mentioned.

CONTEMPLATED IMPROVEMENTS IN THE MOUNTAIN PROVINCE.

During the present year it is proposed to complete the hill trail between Baguio and Suyoc; to construct a new low-grade trail 35 miles long from Cervantes to Bontoc; to construct a trail 32 miles long from Banaue to the north through the Ifugao country to Mayoyao and Bunsian; to complete the Tabuc trail; to stake out a trail down the Saltan River Valley, which the inhabitants have undertaken to construct if given a line on which to work; to begin a trail extending from near Malaneg to Magaptan in Apayao; to build a trail from Balbalasan to the northern Tinguian rancherias in Abra; to bridge the Abra River at Cervantes; to blow the dangerous rocks out of the Abulug River, at least as far up as Magaptan; to construct telephone lines from Bontoc to Lubuagan and to Banaue; and to erect necessary provincial buildings at Bontoc and Tagudin.

MURDER OF AMERICANS BY NONCHRISTIANS.

During the month of May, Harry M. Ickis, a mining engineer in the employ of the division of mines of the bureau of science, was murdered by Manobos in the almost inaccessible mountains lying on the border line between the subprovinces of Bukidnon and Butuan. Only a few weeks later, before news of this unfortunate event had reached Manila, Mr. H. E. Everett, a forester in the employ of the bureau of forestry, and Mr. Tilden R. Wakely, a teacher in the employ of the bureau of education, with three Filipino companions,

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were murdered while asleep in the mountains of eastern Negros by a "montesco" chief.

Both of these crimes were entirely unprovoked. The first seems to have been due to the fact that the principal actor had grown tired of serving as a carrier for Mr. Ickis, and at the same time had a vague idea of getting square with the white race because his father had been imprisoned by the Spaniards fifteen years before; while in the case of Messrs. Everett and Wakely the criminal "felt like killing someone," and therefore murdered them in their sleep.

These two deplorable events, the first of their kind since American occupation, show that we have been overconfident in our belief that the wild people of the mountains are invariably harmless when kindly and tactfully treated. Fortunately government control has been extended to the region where Mr. Ickis was murdered, and several of those concerned in his death are already in custody, while the others are being ceaselessly pursued. Climatic conditions make it impossible to operate against the murderers of Messrs. Everett and Wakely until October or November; but the fact that such a crime can occur and remain unknown for weeks in the interior of the island of Negros, and that punishment must be delayed for months, owing to the impracticability of entering this region during the rainy season, emphasizes the necessity of extending as soon as practicable to the interior of Negros the policy which has already resulted in making most of the territory of the mountain province entirely safe.

THE BUREAU OF HEALTH.

The report of the director of health for the previous fiscal year was commented upon quite freely both by the medical and the lay press, and as a result of its publication the director of health has received so many letters of inquiry that it has been impossible for him to answer them all individually.

In his report for the present year he therefore takes opportunity to furnish the information requested in many of these letters and to give a general statement of the health conditions in the Philippine Islands and of the sanitary work accomplished under the American régime, which is so comprehensive and at the same time so concise that I do not feel like attempting to abstract or further to condense it, but deem it wiser to refer those interested to the original document (Appendix A), which will be printed for separate distribution.

THE PHILIPPINE GENERAL HOSPITAL.

The construction of the Philippine general hospital, for which ₱780,000 was appropriated in the act for the previous fiscal year, has been delayed pending the final completion of plans and the receipt of bids. The plans have now been perfected, and reasonably satisfactory bids have been received. The hospital will consist of an administration building and 5 two-story separate ward pavilions with a capacity of 30 patients upon each floor, a building for surgical work, and separate buildings for kitchen, nurses' home, free dispensary and outclinic, ambulance stable, and morgue. Abundant room is available for the erection of additional ward pavilions as required. I had the pleasure of laying the corner stone of this hospital on March 2, last.

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THE BAGUIO HOSPITAL.

The new building is now occupied, although it is in some respects still incomplete. It is on a site commanding a magnificent view, swept by constant breezes, and fully exposed to the sunshine, the need of which is constantly felt in the cool highlands of Benguet. The building has ample accommodations for 30 patients in its wards and for 14 in private rooms. The need for it was most urgent, as conditions arising from the overcrowding of the old building had become unbearable, and it had been necessary to provide accommodation for a number of patients in tents. This arrangement, while fairly satisfactory during the dry season, would be impossible in July, August, and September.

NEW PRIVATE HOSPITALS.

The University Hospital, conducted under the auspices of the Protestant Episcopal Church of America, has been completed and opened to the public. It affords accommodations for 25 charity and 10 pay or private-room patients. It is situated in the center of one of the poorest sections of Manila and is kept constantly full. More than 2,500 outpatients are treated monthly at its dispensary. The bureau of health furnishes the greater part of the medicines used by it for the indigent poor.

The mission service of the Methodist Church has opened a 50-bed hospital for women and children, known as the Mary J. Johnston Memorial Hospital. The building is located on the Tondo Beach, in the midst of a district inhabited by the most destitute people of Manila, and will largely confine its work to the very poor. The bureau of health supplies a portion of the medicines which it uses in its charitable work.

PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

The most important session of this association ever held took place on February 26, 27, 28, and 29 last. Among the foreign delegates there were present: Dr. R. D. Keith, physiologist and assistant pathologist, Straits and Federated Malay States Medical School, delegate from the Straits Settlements; Dr. Francis Clark, medical officer of health, and delegate from His Britannic Majesty's colony of Hongkong; Prof. Taichi Kitajima, M. D., of the Infectious Diseases Institute, delegate from His Imperial Japanese Majesty's Government; Dr. Cheng Hao, delegate from His Imperial Chinese Majesty's Government; Sir Allen Perry, the honorable principal civil medical officer of Ceylon, and delegate from Ceylon; Prof. T. Ishigami, M. D., of the Ishigami Institute for Infectious Diseases, Osaka, Japan; Doctor Hays, delegate from Siam; Lieutenant Tyley, R. S. M. C., Hongkong; Doctor Vassal, of the Institute Pasteur, Nhatrang, Annam, delegate from Indo-China; Dr. H. Fraser, of the Institute for Medical Research, Kuala Lumpur, delegate from the Federated Malay States.

The importance of the opportunity thus afforded for conference as to sanitary methods and results between such distinguished experts

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can hardly be overestimated. As a direct result of this meeting there was organized the "Far Eastern Medical Association," which will have its first meeting at Manila in 1910.

SANITARY STATISTICS FOR MANILA.

It is believed that the sanitary statistics for Manila are now approximately correct except as to births. Three years ago not more than 40 per cent of the actual births were reported to the bureau of health. At the present time about 75 per cent are reported.

INCREASE IN POPULATION.

So far as can be judged from the statistics and other information available the population of the islands was substantially stationary during the latter years of Spanish rule and the following period of war and pestilence, but for the past three or four years the number of people has increased at a satisfactory ratio throughout the archipelago. In this connection a comparison of the number of persons recently vaccinated by the bureau of health in certain provinces with the number of inhabitants reported for such provinces by the official census of 1903 is interesting.

Province.	Census population.	Number of persons vaccinated.
Tarlac	113,513	155,679
Cebu	658,729	744,314
Sorsogon	120,454	128,366

As the bureau of health could not have vaccinated all of the people in any one of these provinces it is evident that there has been a material increase in the population of each.

IMPROVEMENTS AT SIBUL SPRINGS.

It is definitely known that the waters of Sibul Springs, which were formerly quite extensively used, are very beneficial when taken internally by persons afflicted with diseases of the intestinal tract, especially those of a chronic catarrhal nature, and that bathing in these waters is very refreshing and apparently of considerable value as an aid to the cure of the diseases for which their drinking is indicated. Access to the springs was difficult during the dry season and almost impossible after the rains set in, but the insular government has now completed a good road to them from San Miguel de Mayumo.

When I visited them in November, 1907, it was found that both the springs and the baths connected with them were in a state of complete abandonment. It seemed probable that the waters were suffering direct contamination from neighboring carabao wallows and were unsafe for drinking purposes. Laboratory examination proved this to be the case and funds were at once made available for safeguarding the springs from contamination and for renovating and enlarging the baths.

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The work provided for has been completed, and recent examinations have shown that the waters are now free from amœbæ and other dangerous animal and plant organisms. Their sale by druggists has been renewed and their use at the springs has been greatly facilitated. The Philippine Legislature has appropriated ₱10,000 for further improvement of the springs and their immediate surroundings.

ARTESIAN WELLS.

The work of boring artesian wells in provincial towns steadily continues. In a number of instances the death rate has fallen 50 per cent in towns where such wells have been sunk and the importance of impure water as a source of disease in these islands has thus been conclusively demonstrated.

ADMINISTRATION OF THE FOOD AND DRUGS ACT.

The examinations of foods made in connection with the administration of the food and drugs act have revealed such a condition of affairs as to suggest that much of the illness which has heretofore been ascribed to the tropical climate of the Philippines was due rather to chemicals added to preserved foods intended for use in these islands than to any directly injurious effect of the climate itself.

There were examined during the year 896 samples of food and drug products, of which 89 were absolutely rejected and 172, which were misbranded, were released after being properly relabeled. Many importations were subsequently either denied admittance or admitted only after they had been relabeled, because they were goods of the same kind as those already passed upon as a result of previous analyses. There have been very few willful evasions of the law, and with one noteworthy exception, the merchants of the Philippines have shown a highly commendable spirit in accepting philosophically losses necessarily imposed upon them through the rejection of importations made in good faith, as well as in their efforts to comply with the law.

FREE DISPENSARIES.

The bureau of health has maintained a dispensary at its central office, another at San Lazaro Hospital, a third at the Civil Hospital, and 5 smaller ones in connection with the 5 health stations in Manila. The bureau has supplied St. Luke's Hospital, St. Paul's Hospital, the University Hospital, the Methodist Hospital, and the Philippine Medical School Dispensary with considerable quantities of drugs to be used for the benefit of the poor, while the liberal free distribution of quinine in fever-smitten regions has afforded relief to a large number of sufferers.

MEDICAL INSPECTION OF SCHOOLS.

The cost of the medical inspection of the schools of Manila is now defrayed by the bureau of education. The work has been steadily prosecuted throughout the year with the result that 3,300 cases have

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been recommended for treatment. For the most part these have been cared for at the health stations of the bureau of health and at the Civil Hospital, St. Paul's Hospital, and the University Hospital.

ADMINISTRATION OF PUBLIC CHARITIES.

Funds to the extent of some ₱80,000 are appropriated annually for the maintenance of public charities administered by the board of health. This amount provides clothing, lodging, and subsistence for more than 400 unfortunates and makes possible the furnishing of outside relief to some thousands of others. The medical officers of the bureau of health have charge of the admission of patients to 150 free beds provided by the municipal board and the Philippine Medical School at the San Juan de Dios and St. Paul's hospitals.

MEDICAL EXAMINATION OF IMMIGRANTS.

The satisfactory working of the system which provides for the medical examination of many of our immigrants at their ports of departure is shown by the fact that of the 7,864 examined on arrival it was necessary to reject only 51. Most of these rejections were on account of a virulent form of trachoma, which is almost unknown in these islands and which it is very desirable to keep out.

VACCINATION.

There were vaccinated against smallpox 1,686,777 persons. The administration of this work has been so improved that its cost is now approximately 2½ centavos per capita as against 7½ centavos a few years since. It is a remarkable fact, and one which bears eloquent testimony to the care used by the bureau of science in manufacturing vaccine, and by the bureau of health in using it, that not a single death has occurred as a result of this enormous number of vaccinations, especially when the results obtained in other countries under more favorable conditions are considered. In Germany, for instance, it is stated on reliable authority that there is an average of one death for each 65,000 vaccinations.

Little opposition is now encountered and the chief difficulty in vaccinating the entire population of the Philippines arises from the physical impossibility of keeping virus active until it can reach and be used in the more inaccessible portions of the archipelago. The director of health while in the United States will investigate the possibility of obtaining light, portable refrigerating plants for keeping vaccine cool during long periods.

Between the months of November and March frequent complaints were received from provincial vaccinators that they were not getting the usual or proper number of "takes." As neither the bureau of health nor the bureau of science could offer any adequate explanation of the difficulty, and as the importance of keeping the vaccine active until it could be used was apparent, I deemed it desirable to appoint a committee composed of Dr. Richard Strong, director of the biological laboratory of the bureau of science, Dr. Paul S. Clements, of the bureau of health, who had long been connected with provincial vacci-

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nations and was thoroughly conversant with the methods employed, and Dr. Philip K. Gilman, of the Philippine Medical School, who was not connected with either bureau and who was named chairman of the committee. The following instructions were given to each member:

BAGUIO, BENGUET, *April 23, 1908.*

SIR: In view of the difficulty which has recently arisen in securing in the provinces a satisfactory percentage of takes with the vaccine virus prepared by the bureau of science, and of the failure of the efforts of the director of the bureau of science and of the director of the bureau of health to find a satisfactory explanation of the results secured, and in view of the great importance of manufacturing the best possible vaccine virus and of employing the best possible methods in its preservation and use, both in Manila and in the provinces, I have thought it best to appoint a committee consisting of Dr. Philip K. Gilman, Dr. Richard P. Strong, and Dr. Paul C. Clements to go into the whole question of the methods at present employed in the manufacture, preservation, and use of vaccine virus, with a view to determining, if practicable, what is the cause of the difficulty which has recently arisen, and what methods should be employed in the manufacture, preservation, and use of vaccine virus in order that the virus may be of the best possible quality, may be successfully preserved for the longest possibe time, and may be used in such a way as to produce the best possible results.

To this end the committee should study and report upon:

1. The method of manufacturing, preserving, testing, and delivering vaccine virus employed by the bureau of science; also the length of time virus is kept by the bureau of science before being delivered to the bureau of health.

2. The methods of storing and shipping virus employed by the bureau of health and the length of time during which virus is kept by the bureau of health before being shipped.

3. The methods of preserving and using the virus employed by vaccinators in the provinces. Special attention should be given to the question whether the virus is under ordinary circumstances exposed to the sun, and if so, for how long.

4. The methods employed in making vaccinations in the provinces, and the possibility of removal of vaccine by persons freshly vaccinated so as to prevent its taking. As a check upon the possible removal of vaccine by persons vaccinated, I suggest that some small animals be taken into the provinces and that the actual potency of vaccine virus which is not giving satisfactory results on human beings be determined by experiment. Animal experiments should also be employed to determine the potency of the vaccine which has been kept under the usual conditions for varying periods by the bureau of science and the bureau of health, to determine whether there is any deterioration. At the same time a series of experiments should be carried on to determine how quickly vaccine virus found to be good will deteriorate to the point of becoming useless if exposed to the sun, and how soon it will deteriorate under ordinary temperature in the shade or within such receptacles as are ordinarily employed in the provinces in preserving it after ice has given out.

I suggest that as little as possible be said relative to the appointment and work of this committee, to the end that the investigations as to the methods of preserving virus and conducting vaccinations in the provinces may be examined into without any previous intimation that such an examination is to be made, in order that the conditions found may be those which have existed during the past few months.

Very respectfully,

DEAN C. WORCESTER,
Secretary of the Interior.

The committee has completed its work in the city of Manila, and at my request has rendered a preliminary report thereon in order that its recommendations might be put into effect as soon as possible. It has found that virus kept in an ice box at a temperature of 10° C. was still active after seven weeks and the experiment is being continued. The period of potency for virus kept in the dark at ordinary room temperature was not usually more than one week, while that kept in

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a dark room at a temperature of 37° C. sometimes became entirely inert after twenty-four to forty-eight hours. The period of potency for virus exposed to the direct sunlight, the virus used being previously active and fresh, is from twenty-four to forty-eight hours, the potency being entirely destroyed in that time.

The committee reached the following conclusions:

1. The mehod of manufacturing, preserving, and testing vaccine virus employed by the biological laboratory of the bureau of science is in accordance with the most approved modern procedures, and after a study of the recent literature on the subject and a consideration of the methods employed in other countries in the manufacture of vaccine virus we have nothing to suggest in the way of improvement.

2. In regard to the length of time the virus is kept by the bureau of science before sending it out, we believe that a period of at least one week should elapse between the date the virus is manufactured and the date it is sent out. This time should elapse in order that the majority of the saphrophytic bacteria, always present in the virus, may be destroyed by the action of the glycerin added to the lymph and the necessary tests of the purity of the vaccine be performed. While at the temperature of cold storage (10° C.) virus has been repeatedly shown to be potent after five months, we should recommend that virus over one month old be not sent out. This recommendation is made because it is a well-established fact that sudden variations in temperature exert a very unfavorable influence on the virus. Such variation of temperature must occur in the virus when it is delivered to the bureau of health, and especially when it is shipped to the provinces, and therefore virus as fresh as possible should be obtained for this purpose.

3. In regard to the method of storing and shipping virus employed by the bureau of health, your committee believes that some improvement might be made on the method of obtaining the virus from the bureau of science, namely, that instead of sending it by hand, one of the specially devised ice boxes used for sending virus to the provinces be sent to the bureau of science, in which box the virus may be placed on ice during its transit to the bureau of health. Furthermore, the temperature at which the virus is stored at the bureau of health should not be over 15° C. Your committee has found upon investigation that in the past the virus has been kept at a temperature of 25° C. or over for periods of as long as ten days, there being but 10 pounds of ice supplied daily to the refrigerator. This high temperature has undoubtedly exerted a very unfavorable action, at least on the potency of the virus. In regard to the method employed by the bureau of health in transporting the virus to the provinces, so far as has been observed by the committee, we have no improvements to suggest, provided that the virus is shipped as promptly as possible after being obtained from the bureau of science.

Furthermore, your committee recommends that unless the virus can be kept at 15° C. at the bureau of health, the same bureau make requisition for virus only at the time it is required for immediate delivery and use.

4. As it has been very difficult and in some instances impossible to determine the special lot of virus used and complained of, it seems to the committee that in the future instructions should be issued to those concerned to the effect that any complaints against virus should state the number of the virus used and found unsatisfactory.

5. In reviewing the complaints against the vaccine made by various persons, it becomes evident that there is some diversity of opinion in regard to what constitutes a good percentage of "takes" in a series of general vaccinations. Your committee believes that 50 per cent of positive results would constitute a very good average in general vaccinations. Dr. W. K. Beatty, district health officer of the thirteenth district, who has had occasion to make numerous complaints regarding the virus, writes from Nueva Caceres under date of June, 1908, reporting a total general average of 53⅝ per cent of "takes" in twenty-one months of vaccination of 515,071 persons; that is, 275,048 successful cases.

There still remains to be investigated by your committee: (3) The methods of preserving and using the virus employed by vaccinators in the provinces; (4) the methods employed in making vaccinations in the provinces and the possibility of removal of vaccine by persons freshly vaccinated to prevent its taking.

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The proper instructions have been given by the undersigned to insure the carrying out of the recommendations of this committee and an arrangement has been made under which the bureau of health will ship its virus direct from the cold-storage depository of the bureau of science.

INSTALLATION OF MANILA SEWER SYSTEM.

This important work, so intimately connected with the sanitation of the city, is nearing completion. During the year 24.4 miles of street sewers have been laid, giving a total of 38.4 miles laid and leaving only 13.6 miles of the total contracted for. Pumps and pump houses have been contracted for; work on the latter has begun, and the entire system should be in working order before the close of the fiscal year ending June 30, 1909. Manila will then be the only city in the Orient having a complete water-carriage system for the disposal of its sewage.

SWEEPING PUBLIC BUILDINGS.

On account of the prevalence of tuberculosis and of careless habits of spitting and the consequent danger of communicating this disease by dried sputum if floors were swept carelessly or while public building were occupied, the director of health called the attention of the executive secretary to the desirability of having floors thoroughly sprinkled with wet sawdust before sweeping and of having sweeping begin only after buildings were vacated. This procedure is now uniformly followed.

INFANT MORTALITY IN MANILA.

A considerable amount of public interest has been aroused in the shockingly high infant mortality among the Filipino children of Manila, and the director of health expresses the opinion that as much is now being done by the health authorities, by the Gota de Leche Society, by the churches, by the schools, by private physicians, and by private individuals as in any other city of equal size in the world. Nevertheless the death rate of infants continues distressingly high and much remains to be done. During the year 4,484 children under 1 year of age have died. These deaths constitute approximately 44 per cent of the total number.

IMPROVEMENT IN AMBULANCE SERVICE.

The bureau of health provides ambulance service for the transportation of cases of dangerous, communicable disease, and of those for the Civil Hospital, while the police department transports emergency cases. Arrangements have been made for further improving facilities by establishing a central station near the Bridge of Spain where modern motor-car ambulances will be installed. This will result in decreased expense and more satisfactory service.

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CHOLERA.

Asiatic cholera has twice invaded Manila during the year, and has been present in the provinces, where it has caused serious loss of life.

In view of various unfounded statements as to the relative frequency and importance of cholera epidemics during the period when the Philippines were under Spanish rule and that following the American occupation, it has seemed to me desirable to go carefully into the history of cholera in the Philippines from the date of its earliest recorded occurrence to the present time, in order to arrive at a clear understanding of the facts and to deduce therefrom such conclusions as would seem to be justified.

This subject has been treated in a special report, which will be forwarded to the Commission as soon as certain statistics for the years 1882 to 1896, inclusive, which are being compiled from the church records of the city of Manila, can be completed.

HOOKWORM DISEASE.

It can now be stated with certainty that two important factors are primarily responsible for the present high mortality among the Filipinos. One, namely, infant mortality, has already been referred to. The other is the presence, in the vast majority of the inhabitants, of intestinal parasites, the hookworm being the most dangerous of these.

An absolute demonstration of the highly prejudicial influence of these organisms has been made in Bilibid prison.

While the sanitary management of this institution continued under the control of the warden the annual death rate steadily increased until it reached the appalling figure of 238 per 1,000. Sanitary control was then transferred to the director of health. The application of ordinary measures, such as relief from overcrowding, improving methods for disposition of night soil, bettering the drainage system, regulating diet, etc., resulted in bringing the mortality down to some 70 per 1,000, after which further progress could not be made. It was observed that patients were dying of illnesses which should not have killed them, and this led to a systematic examination of the stools of all prisoners. There were found 84 per cent to be infected with at least one kind of intestinal parasite, 50 per cent had two or more, 20 per cent had three or more, and 52 per cent had hookworms. Treatment was successfully undertaken for the removal of these parasites, after which the death rate steadily fell, until it reached the very low figure of 13 per thousand. Proper steps having been taken to prevent reinfection, the death rate has continued low.

More than 1,000 stool examinations made of persons living throughout the islands show that the condition of affairs in Bilibid was fairly typical of that which prevails generally. Were it possible to apply the measures which have proved so effective in Bilibid, an enormous improvement in health conditions would unquestionably result. While this is impracticable, it is nevertheless apparent to every one conversant with the situation that a general campaign must be inaugurated for ridding the inhabitants of these dangerous organisms, which, even in those cases where they fail ultimately to cause death, invariably sap the vitality of their involuntary hosts,

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causing anæmia, lassitude, and great susceptibility to attack from a variety of diseases. It is needless to say that as soon as the facts became known the situation was given very careful consideration by the director of health, who has formulated a carefully considered plan of campaign, which would already have been inaugurated had not the prevalence of cholera made such heavy demands upon the time and energy of his small force. The details of this plan will be found set forth in his annual report "Appendix A."

At the meeting of the Philippine Medical Association heretofore referred to the discussion of this matter was given an important place and the Association passed the following resolution:

Whereas it appears that the treatment of the prisoners for intestinal worms has been an important factor in reducing the death rate at Bilibid Prison; and

Whereas it would appear further that over three-fourths of the population of the Philippines is at the present time infected with animal parasites; and

Whereas infection with these parasites can be controlled almost absolutely by properly disposing of the human excreta which contain the ova of the parasites; and

Whereas the proper disposal of human excreta will at the same time remove one of the most dangerous channels for the dissemination of other infectious diseases,

Therefore; be it resolved that the Philippine Islands Medical Association shall petition the government of the Philippine Islands, through the honorable Dean C. Worcester, Secretary of the Interior, that a commission of five properly qualified members be appointed to decide upon the most practicable and effectual means for the proper disposal of human excreta that can be established in these islands.

Be it further resolved that the government of the Philippine Islands be petitioned to make such appropriation and provide such amounts for the establishment of a working system for the disposal of human excreta as from the report of this commission may appear practical and expedient.

LEPROSY.

The segregation of lepers has steadily continued. Of the 4,000 estimated to exist only about 1,000 remain to be collected and transported to Culion. In the provinces which have now been entirely freed from lepers more than 300 new cases of leprosy formerly appeared annually. Now not more than 50 new cases appear, which fact alone would more than justify the policy of segregation. It can be positively stated that not only has the increase in the number of lepers been permanently checked, but a steady decline has begun and will continue if the present policy is adhered to.

The segregation of lepers at Culion began in May, 1906. At this time it was estimated that there were at least 3,500 lepers in the islands. At the end of the first year the estimated number had been reduced to 2,826. At the end of the present year it was 2,486. The reduction in the number of supposed lepers during the first year resulted largely from the discovery that many persons in Samar, Leyte, Masbate, Romblon, and Negros had been erroneously classified as lepers when in reality suffering from other diseases. One of the beneficent results of the campaign against leprosy is that these unfortunates have been restored to their rightful social standing. During the past year, however, in a number of provinces more lepers have been found than had been reported. In Albay there were 315, as against 57 reported; in Sorsogon 121, as against 87. These increases more than offset the erroneous diagnoses of the previous year, and we may state with con-

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fidence that at least 300 less persons have contracted the disease in the Philippines than during the previous year.

The attitude of the people as a whole toward the segregation work has been admirable. The separation of husband from wife, parent from children, or brother from sister is heartbreaking business, especially in these islands where family ties are especially strong, but when the necessity for this course has been explained to the unfortunates and to their relatives, with rare exceptions they have calmly accepted their hard lot and have often furnished valuable and active assistance to the representatives of the law. Once transferred to the colony and accustomed to conditions there, those who are not beyond human help at the time of their arrival as a rule become healthier, happier, and better satisfied than they were in their native provinces.

Mindoro, Masbate, Romblon, Capiz, Iloilo, Antique, Oriental and Occidental Negros, Samar, and Leyte have already been gone over two or more times and may be considered free from leprosy. Cebu, Bohol, Ambos Camarines, Albay, Batangas, Tayabas, Sorsogon, Benguet, Lepanto-Bontoc, and Ilocos Sur have been gone over once, but are not yet regarded as being free from lepers. Ample provisions have been made for continuing this most important work.

The construction of permanent buildings at the colony has begun. A large reenforced concrete warehouse has been completed and a 100-bed hospital of the same material is being erected. This work has been conducted in the face of great difficulties, not the least of which is a scarcity of laborers due to fear of leprosy, and under the circumstances the progress made is gratifying.

X-RAY TREATMENT OF LEPROSY.

In the last annual report mention was made of the 29 lepers undergoing X-ray treatment. One was added to this number and the results at present stand as follows: Apparently cured, 1; markedly improved, 5; improved, 7; condition unchanged, 15; died, 2, one from chronic amœbic dysentery and the other from puerperal infection, death having no connection with the X-ray treatment in either case. The individual apparently cured was under treatment for eighteen months. Bacteriological examinations for the bacilli of leprosy now invariably results negatively in his case.

Five others show practically no signs of the disease but are positive microscopically. In seven the tubercles and infiltrations have been greatly reduced in size and in the remainder the progress of the disease seems to have been arrested. Other treatments for leprosy which have been recommended from time to time have been given faithful trial at San Lazaro, but the results obtained with the X-ray, while far from satisfactory, are by far the best yet secured.

THE OPIUM HABIT.

On March 8, 1906, the Philippine Commission, after giving careful consideration to the report of the special opium committee which for nearly two years had been engaged in gathering data in oriental countries where the opium habit is prevalent and in formulating its conclusions, enacted a law designed to restrict the sale and suppress the evils resulting from the improper use of opium until March 1, 1908,

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after which date the importation or use of this drug by any person, except for medicinal purposes, was prohibited by act of Congress. This law of the Commission was largely successful in restricting the opium habit to those who had already acquired it, but a very large majority of these individuals continued to indulge themselves up to the last moment when they could legally do so.

There is reason to believe that for some time prior to March 1 unscrupulous persons, probably through the medium of an organized corps of instructors, began systematically to teach the use of cocaine to opium habitués. There was great danger that one bad habit might thus be replaced by another, and the Philippine Legislature on October 10, 1907, repealed the first opium act and replaced it by another, which embodied also the necessary provisions restricting the use of cocaine, alpha or beta eucaine, or of any derivative or preparation of these drugs or substances. Since March 1 the use of opium or cocaine for other than strictly medicinal purposes has been unlawful, and the importation of these drugs may be made only by the government, which will not sell them to anyone not clearly entitled by law to purchase them.

The possession of any opium pipe, hypodermic syringe, apparatus, instrument, or paraphernalia for the use of opium or of any hypodermic syringe for the use of cocaine, alpha or beta eucaine, or any derivative or preparation of such drugs or substances, or any other apparatus especially designed for using any of the said drugs or substances in or on the human body, is deemed prima facie evidence that the person in possession of such pipe, hypodermic syringe, apparatus, instrument, paraphernalia, or articles, has used some one of such prohibited drugs or substances, or the drug or substance for the use of which such apparatus, instrument, or paraphernalia are especially designed, without the prescription of a duly licensed and practicing physician, unless such prescription is produced by such person.

For some time after March 1 conditions among opium users were deplorable. Free hospital accommodations had for a long time previous been available for those who desired them but had not been made use of to any extent. Now the rush was so great that the San Juan de Dios Hospital, with which the government had a contract for the care of opium habitués, asked to be released because it lacked proper facilities for guarding and restraining so large a number of frantic persons. In order to meet the emergency it proved necessary to utilize several of the wards of the new insane hospital at San Lazaro, where pandemonium prevailed for some time. The thanks of the writer are due, and are hereby extended, to the Chinese consul-general and to the Chinese chamber of commerce for aid in dealing with their people, and to the Rev. Mr. Studley, who, at great risk to his personal safety, took up his residence with these unfortunates and worked unremittingly as a hospital attendant for their relief.

The results obtained at Manila were highly satisfactory. Our experience seems to show that the opium-smoking habit is not especially difficult to treat, but in treating persons who have become accustomed to take the drug by the mouth, or to use it hypodermically, much more difficulty is encountered.

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A contract to care for users of opium was made with the Mission Hospital, at Iloilo, and has continued in effect throughout the year with very satisfactory results.

A government hospital was opened at Cebu, but the combined efforts of the provincial board, the district health officer, and Rev. Mr. Studley failed to overcome the indifference or active opposition of the opium victims of that province and of their friends. The hospital was closed on May 27 after an unsuccessful career of forty-two days. Users of the drug in Cebu are now being actively prosecuted. The total number of persons thus far treated is 725, of whom 542 have been discharged as cured, 26 have been discharged as improved, and the remainder are still under treatment.

The bureau of health has imported shoots of *Combretum sundaicum*, which has gained so great a reputation in the treatment of the opium habit in India, and will soon be in a position to test this remedy, which it will do in the hope that it may prove less severe than the "reduction treatment" which has thus far been used with the results above mentioned.

BUBONIC PLAGUE.

It is a cause for congratulation that the islands have remained entirely free from plague, especially as Hongkong, Amoy, and other Chinese ports continue to suffer from annually recurring epidemics of this disease, which appears in May, reaches its height in June or July, and then gradually declines until its disappearance in November. One case of plague arriving on a steamship was detected and transferred to San Lazaro Hospital for treatment.

SMALLPOX.

More cases of smallpox appeared in Manila than during the previous year, but they were practically confined to the unvaccinated. It is an unfortunate fact that the percentage of Americans among this number was large and that several vigorous opponents of vaccination paid for their hostile attitude with their lives.

SLEEPING SICKNESS.

One case of sleeping sickness has been detected through the year, and news has been received of another suspected case in the province of Albay, this being the first Philippine record of the ailment.

TUBERCULOSIS.

The number of deaths from tuberculosis at Manila was slightly less than during the previous year. This is encouraging, in view of the fact that for several previous years there had been a steady increase in deaths from this cause. This disease, though common in the lowlands, is almost unknown in such mountain regions as the highlands of Benguet. At the present time the only institution for its treatment is the government hospital at Bilibid Prison. Active steps to combat it have been limited to the issuance of educational circulars and the enactment of proper ordinances in Manila.

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The Filipino people are accustomed to regard it as a necessarily fatal ailment and fail to realize that liberal diet and out-of-door life will cure a large percentage of the persons suffering from the disease in its earlier stages. Actual demonstration is necessary to convince them of this fact, and I am of the opinion that a temporary experimental tuberculosis hospital should be established in the near future at some point near Baguio, Benguet, and that should results justify such a course, as would doubtless be the case, a permanent institution should be established there as soon as practicable.

TYPHOID FEVER.

From typhoid fever 84 deaths have been reported in Manila, as against 56 for the previous year. Although under existing conditions the number of cases seems slowly to increase, it is believed that the completion of the new water system will lessen the danger and will probably enable the health authorities to keep it from ever becoming epidemic.

THE BAGUIO HOSPITAL.

The popularity of this institution has continued to increase. Last year the number of patients was 1,371 and this year it has been 2,291, an increase of almost 82 per cent. The Igorots are now coming in not only from Benguet, but from neighboring provinces.

A detailed review of all new legislation relative to matters affecting the public health, and of the work of the director of health and of the several divisions of his bureau, will be found in his annual report, "Appendix A."

NEED OF PROVINCIAL HOSPITALS.

The complaint has been made, not without some justice, that Manila has received more than its fair share of attention at the hands of the legislators, to the neglect of the provinces, which pay their full share of taxes. The amount of relievable human suffering which exists in the provinces chiefly populated by civilized and Christianized people is unbelievable if one has not actually seen it, while no practical measures for combating or curing disease are known to the non-Christian people, and with them it is strictly a case of survival of the fittest.

Nothing has been more useful in gaining the good will of the more wild and warlike tribes than the small amount of medical and surgical work which it has been possible to perform heretofore with the limited means available.

Now that the belief so long prevalent in the Philippines that hospitals are places where people go to die is passing, I believe that the time is ripe for the establishing of several provincial hospitals, which could be operated at moderate cost and would accomplish untold good.

THE FUTURE POLICY IN HEALTH WORK.

I concur fully in the opinion of the director of health that the direct road to the goal of permanent low morbidity and mortality rates in the Philippine Islands is through vaccination against smallpox, prevention of the reintroduction of bubonic plague, im-

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provement in water supplies, elimination of intestinal parasites, systematic warfare against tuberculosis, the eradication of malarial mosquitos, and the controlling of infant mortality by improved hygiene, and I further concur in and make my own the following recommendations of the director of health to these ends:

1. That in view of the fact that the elimination of the intestinal parasites of the residents of the Philippine Islands bids fair to save a large number of lives, steps should be taken to accomplish this work and render conditions such that reinfection will not occur. To bring this about a system for the disposal of night soil should be inaugurated, preferably by the oriental method, whereby this substance is used for fertilizing mulberry trees, from which a profit may be realized instead of an additional burden upon the taxpayers.
2. That the sum of ₱25,000 be set aside for building a few small isolating pavilions and treating therein a limited number of tubercular cases, and that an outdoor dispensary be established in the city of Manila at which only persons afflicted with tuberculosis be treated; one of the principal objects of such a dispensary to be its use as a means of diffusing knowledge of the home treatment of this disease and the precautions that should be taken in order not to infect others.
3. That at least three provincial hospitals with a capacity of 30 beds each be provided; the initial cost of each to be about ₱30,000.
4. That a committee of five physicians be named to make a further study of the causes of excessive infant mortality, with the view of reducing the death rate among infants.
5. That an extensive laboratory study be made of cholera, with a view of ascertaining the exact cause of the appearance and disappearance of cholera spirilli in the Philippine Islands.

THE QUARANTINE SERVICE.

Effective quarantine has been maintained against foreign countries badly infected with dangerous communicable disease, and so far as is known no such disease has been introduced into the Philippines during the year. The success which has been had in excluding bubonic plague is especially gratifying.

With the approaching completion at Manila of wharves along which deep-sea going merchant vessels may lie, a new danger would confront us in the increased facility with which rats might land from infected ships were not special measures taken to minimize this risk. The structures beneath the floors of these wharves are being made smooth, so that as little foothold as possible is afforded for rats, and the several wharves will be connected with the shore by bridges, which can be lifted at night and at other times when they are not in use, so as to prevent the escape of rats to the shore.

IMMIGRATION DIFFICULTIES.

Beginning with January 1, 1907, the medical provisions of the United States immigration laws became applicable to Chinese desiring to enter the islands. At the time this law took effect more than 5,000 Chinese, many of whom had resided in the Philippines for thirty years or more, were absent on visits to China. When they desired to return a large number of them were prevented from doing so because they were afflicted with quarantinable diseases, of which trachoma was the most important. Very great hardship was thus worked through the enforced separation of many of these men from their families residing in the Philippines. Had they not gone to China they would not have been molested, and many of them

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doubtless left the islands in ignorance that the fact that they were afflicted with trachoma would prevent their return. Chinese from the district of Amoy were particularly affected by this law, and in March it was estimated that more than 3,000 individuals who desired to return to Manila, but had been prevented from doing so, were assembled at that port, where there developed a resentment against the United States which became increasingly bitter. It was charged that many of these would-be immigrants had been unlawfully prevented from returning, and under the circumstances it seemed best to direct Passed Asst. Surg. Victor G. Heiser to proceed to Amoy with a view to ascertaining whether some of the large number of Chinese who had been refused passage on account of trachoma might not be admitted. It was found that many of them were suffering from an affliction which resembled trachoma, sufficiently so that their exclusion had not been unnatural but was nevertheless unjustifiable, and these individuals were authorized to proceed with their journey.

Furthermore, it was learned that in the past American consuls at Amoy had been in the habit of appointing so-called consular surgeons. Definite salaries were in some cases paid to these surgeons by the consul who himself then collected fees for medical examination from each alien who desired to go to the Philippine Islands or other American territory, the aggregate amount thus collected being large. This system is unquestionably open to severe criticism, as is that at present in vogue of having the examinations made by private physicians who charge fees therefor and who therefore have a direct pecuniary interest in retaining as long as possible, and in reexamining as many times as possible, would-be immigrants. An effort, therefore, has been made to secure the detail at Amoy of a regular officer of the United States Public Health and Marine-Hospital Service to make these examinations. As Amoy is one of the great bubonic plague centers of the world, there exist further and cogent reasons for such a detail, and it is earnestly hoped that it may be brought about during the present year.

Detailed statistical and other information relative to the work of the quarantine service will be found in the report of the chief quarantine officer, "Appendix B."

BUREAU OF FORESTRY.

During the year legislation has been enacted authorizing the free use of timber, stone, and earth from public forest lands by any railway company to which a franchise might be given to build a line to Baguio, Benguet; providing for the establishing by the director of forestry, with the approval of the secretary of the interior, of communal forests for municipalities; authorizing the continued use of the English system of measures in the purchase and sale of manufactured lumber in view of the fact that most of the sawing machinery imported is graduated in this system; and providing for the free cutting and use of certain first group woods in buildings of strong material.

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VISIT OF A REPRESENTATIVE FROM THE FOREST DEPARTMENT OF JAVA.

As a result of a brief visit of Doctor Treub, who is in charge of the agricultural, botanical, and forests departments of the Javan government, at Buitenzorg, Mr. Paul Kerbert, a forester of the Javan government, was sent to the Philippines to study the methods used in the conservation and development of our forest resources, and more especially to investigate steam logging. Every possible facility for observation was extended to Mr. Kerbert, and after his return he recommended to the Javan government that it purchase two American logging donkey engines, and employ an American expert logger to direct their operation in the teak forests of Java; also that the Javan government endeavor to secure four trained American foresters from the Philippine bureau of forestry to carry on explorations of the forests of Sumatra.

FORESTRY INVESTIGATIONS IN THE AGUSAN RIVER VALLEY.

Investigations by Forester W. I. Hutchinson of a tract of 2,000 square miles bounded by the Agusan, Tagabaca, and Gibong rivers and the eastern mountain chain of Mindanao, shows that all but about 27,000 acres are timber land and that more than 80 per cent of the timber is soft wood, such as is now being logged profitably in northern Negros.

EMPLOYMENT OF IGOROT FIRE WARDENS IN NORTHERN LUZON.

Quite satisfactory results in checking the disastrous grass fires which sweep over the mountains of northern Luzon during the dry season have been obtained through the appointment of Igorot fire wardens, who take great pride in their office and have proved to be energetic, faithful, and efficient employees.

INSPECTION OF PUBLIC LANDS.

The bureau has inspected 2,583 parcels of public land to determine their character, and all but 52 have been certified as more valuable for agricultural than for forestry purposes.

INSTRUCTION OF FILIPINO EMPLOYEES.

A systematic effort is being made to increase the efficiency of the Filipinos employed in the field by the bureau of forestry. This force was convened at Manila at the close of the annual foresters' conference, and a practical school of instruction was organized for their benefit on the Lanao Forest Reserve. At its close an examination will be held and all employees will receive a definite rating.

FOREST MAPS.

The work of mapping the forest areas in the Philippines has been vigorously pushed, and has been completed for very large areas in central and southern Luzon, Mindoro, and the Zamboanga Peninsula of Mindanao. Isolated areas in other parts of the islands

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have been mapped. A detailed map has been made of the tract of the Port Banga Lumber Company, in Zamboanga, which covers an area of 137 square miles.

MUSEUM AND HERBARIUM COLLECTIONS.

Both the total number of wood samples and that of forest species represented have been greatly increased. There are now 2,285 wood samples representing 486 species. This collection and the botanical specimens and microscopic sections of wood prepared by the bureau of science render the proper identification of a large number of arboreal species easy and certain. The bureau of forestry has added steadily to the herbarium specimens of the bureau of science, turning over more than 4,089 during the year. Some 2,283 species have now been identified. The whole of America north of Mexico contains only about 640 tree species. On 17 square miles of the Lanao Forest Reserve alone 548 species have been found.

DURABILITY TESTS OF WOODS.

Durability tests to the number of 156 conducted with a special view to ascertaining the durability of different woods in resisting the attacks of fungi and white ants are now in progress.

MUSEUM SPECIMENS.

The museum specimens of the bureau of forestry number 7,572, illustrating floor, shelf, hand, and plank specimens of wood; also resins, gums, wood oils, gutta-percha, rubber, tanbark, dyebark, and other barks, bamboos, bejucos (rattans), fruits and seeds of trees, as well as articles manufactured from forest products. The limited amount of space available makes the proper exhibition of these valuable specimens impossible, and provision is now being made for displaying them in the Anloague Building, where a museum is being established under the custody of the bureau of science.

TIMBER TESTING LABORATORY.

The timber testing laboratory has been without a manager during the year, and its work has therefore come temporarily to a standstill.

INVESTIGATIONS IN MINDORO.

In connection with its field work in Mindoro the bureau of forestry has been able to secure data showing the possibility of building a road through the rich, undeveloped agricultural region lying between the foothills of the Mount Halcon Range and the east coast. The proposed road would open hundreds of thousands of acres of the richest agricultural land in the Philippines, and it is hoped that work upon it may be begun in the near future.

Further details of the work of the forestry bureau, together with statistics as to business done in lumber and other forest products during the year, will be found in the report of its director, "Appendix C."

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THE BUREAU OF SCIENCE.

Relationship Between the Bureau of Science and the Philippine Medical School.

The close relationship which exists between the bureau of science and the Philippine Medical School is likely to render necessary in the near future some readjustment between the officers and employees in the two institutions. The director of the bureau, Doctors Strong, Musgrave, Marshall, Garrison, Ruediger, and Messrs. Rosario and Clegg, have all been active members of the faculty of the medical school and have devoted much time to its interests. The results have been very satisfactory, so far as regards the school, but the regular work of the bureau has necessarily suffered to some extent.

With the completion of the new general hospital buildings and the opening of the doors of that institution it will, of course, be necessary to organize a hospital staff, as no single physician and surgeon, however competent and tireless, could properly attend to the work of such an institution.

Many members of the faculty of the medical school will require the laboratory facilities of the bureau of science for themselves and for their advanced students, while officers and employees of the bureau of science will doubtless continue to give instruction in the medical school. The central scientific library, now connected with the bureau of science, will necessarily serve as a medical library for the school. The biological staff of the bureau of science will need to have access to the pathological material from the hospital, while members of the clinical staff of the hospital will wish to pursue laboratory investigations. The faculty of the medical school will desire to take their students into the hospital in order to give them practical instruction. It is evident, therefore, that the relationship between the three institutions will necessarily be of the most intimate character, and that each will profit by the close proximity of both the others. However, the satisfactory division of duties between the members of their staffs is a matter which will require careful consideration.

The Securing of Trained Men for the Bureau of Science.

The securing of trained men for the work of this bureau continues to offer some difficulties, although these have materially diminished since the force was reorganized, and most of the positions now authorized are filled. It would, however, be far more satisfactory if we were able to secure competent employees who are residents of this country instead of obtaining them from the United States and Europe. It is believed that with the return of government students from the United States this will become possible to some extent, and that a number of positions should be provided which may be filled by returning Filipino students with good biological or chemical training while they are gaining necessary practical experience and increased knowledge under the direction of the highly trained men now employed, whose places they would ultimately take as the present incumbents were promoted or left the service. While this pol-

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icy would involve some additional expense at the outset, there can be no doubt that it would ultimately result in economy.

Promotions would probably be fairly rapid in the case of those who showed themselves worthy of it, for the reason that the highest salaries paid by the bureau of science are materially less than many of those paid well-trained men in the United States and Europe. We have learned to our sorrow that many of our best men are ultimately called to positions which are financially more profitable than any we can offer them. Our ability to retain them so long as we do finds its explanation in the very exceptional opportunities for original scientific investigation which the service in the bureau of science affords.

Cement-testing Laboratory.

There has been a remarkable increase in the demands for cement tests. During the previous fiscal year only about 24 samples were tested, but during the last seven months of the present year more than 1,200 tests were made. This necessitated the providing of increased facilities. One of the outbuildings of the bureau has been converted into a well-equipped cement-testing laboratory to which the city of Manila and the bureau of public works are now sending all of their samples. The city has contributed its testing apparatus. The insular purchasing agent's office and the port works of Manila are the only offices of the civil government which do not now send their cement work to this laboratory, and the writer is of the opinion that in the interests of economy, efficiency, and uniformity of tests they should be required to do so.

To the claim of these offices that their work is now done by employees "when not doing anything else" and consequently costs them practically nothing, it may be replied that these employees might be doing something else if not engaged in making cement tests, and that the tests do actually cost the value of the time of the employees making them, whatever that may be, plus depreciation on the plant employed and interest on the money invested in it. It is now the well-established policy of this government to centralize its work so far as practicable. Were all cement tests made by the bureau of science the cost for from 200 to 325 samples per month would be ₱3.50 each, while that for 326 to 500 per month would be ₱2 each, the price per sample increasing rapidly if less than 200 samples were tested, as the highest paid employee would need to be retained and only the laborers could be dispensed with.

The Producer-Gas Plant.

The producer-gas plant for which appropriation was made has not been installed, owing to the illness of Mr. Gilkerson, the engineer of the bureau of science, who was in charge of the perfection of plans and specifications.

As it is a well-known fact that the highest efficiency may be obtained from gas by exploding it in the cylinders of a properly constructed gas engine rather than by using it as a combustible to produce steam, and as the completion of the new hospital building and the new medical school building, which will both doubtless

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depend for light and power on the bureau of science plant, will involve the installation of an additional engine, it will be economical to install a gas engine in connection with the producer-gas plant.

The Philippine Museum.

Very valuable and interesting ethnological collections have been installed and are now on exhibition in the second story of the Anloague Building. The bureau of public works has now vacated the first floor of this building and funds have been made available to prepare it for museum purposes. A part of the additional space thus gained will be used for the exhibition of the museum specimens of the bureaus of forestry and agriculture, illustrating the forest and agricultural resources of the islands.

The present building is not really suitable for museum purposes and its location is unfortunate. It is believed that when a small part of the exhibits now available are installed and the Legislature realizes what a magnificent showing might be made were adequate space and a sufficient number of museum cases available, there will be little difficulty in securing appropriation for a suitable and properly located museum building with special facilities for commercial exhibits. An institution might then readily be established which would be of the greatest educational value and would strongly stimulate the conversion of the enormous natural resources of these islands into hard cash.

The Anloague Building would be very useful for private commercial purposes and the money which might be derived from its sale would doubtless go far toward meeting the cost of a new and suitable structure to which the present museum cases could be transferred.

General Scientific Library.

The development of the library has continued to be most satisfactory, and the use made of its facilities increases steadily. While its shelves are not encumbered with the obsolete or otherwise useless works so commonly found in similar institutions, it is believed that it is the best working scientific library in the Far East, and that it compares favorably with many good scientific libraries in Europe and America. It is added to as occasion demands and its growth is steady and healthful. Space for additional shelving will be required by 1910. This can be furnished by vacating two rooms adjoining the present stock rooms if the much needed new wing is added to the laboratory building before that time.

The Philippine Journal of Science.

The plan of issuing this journal in three sections, dedicated to medical science, botany, and general science, respectively, has been most successful in encouraging subscriptions and exchanges. The cash value of the subscriptions and exchanges is now approximately ₱6,375.

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The Necessity for a New Wing to the Laboratory Building.

The need for increased space, which was considerable at the end of the fiscal year 1906, and great at the end of the year 1907, has now become imperative. The building as originally constructed was, and so far as present indications go is likely to continue to be, fully adequate for the needs of the bureau of laboratories as then organized, but the further centralization of the scientific work of the government by the establishing of the bureau of science created new and unforeseen conditions. On this subject the director of the bureau says:

> As each year passes and the work of the bureau continues to expand, the need of such additional space becomes more and more evident. The library will soon have all of its shelf space filled; the herbarium has now completely occupied one room and some cases have been placed in another; the entomological collection is practically at its limit; the collection of fishes takes a large part of the room devoted to pathologic exhibits, and when identified specimens return from the United States there will be no place to put them; the division of mines has not been able properly to extend its work because of lack of floor space, and when Dr. W. D. Smith, now on leave in Europe, returns with his collection of identified paleontologic material we shall be hard put properly to accommodate it. Further expansion of the chemical laboratory is also practically impossible without vacating some of the laboratory rooms used for other purposes. These collections are now so valuable and of such fundamental importance for scientific work in the islands and also for the development of the Philippine University that I hope the appropriation for the construction of a suitable wing will not be delayed beyond the next session of the legislature. It would be well, at the same time, to consider the advisability of building the structure necessary for the Philippine Museum in connection with this wing.

It is earnestly hoped that at its coming session the Legislature will see its way clear to meet this need.

The Biological Laboratory.

Dr. Richard P. Strong, the director of the biological laboratory, while absent on vacation leave, visited the most important scientific institutions in Milan, Berne, Paris, Munich, Leipzig, Vienna, Dresden, Berlin, Hamburg, London, Liverpool, Oxford, Cambridge, New York, Boston, Baltimore, and Philadelphia. He attended the Fourteenth International Congress of Hygiene in Berlin in September, and reported upon the subject of protective inoculation against plague. He also attended the Annual Natur-Forscher Versammlung in December. Doctor Strong paid particular attention to the work of the several foreign schools of tropical medicine. It would be well if all officers and employees could spend their vacation periods with such profit to the government and to themselves.

AUTOPSIES.

The general autopsy work heretofore performed by the biological laboratory has now been transferred to the Philippine Medical School, but the laboratory still makes the autopsies and undertakes the diagnoses of cases of suspected infectious disease.

Employees of the laboratory have made 9 trips through the provinces for the bacteriologic diagnosis of leprosy. Although 1,875 examinations were made, only 1,571 gave positive bacteriological evidence of the presence of the disease, the value of these examinations being thus conclusively demonstrated.

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Very numerous bacteriological examinations of water have been necessary, the bureau of public works sending many samples from artesian wells. Examinations for the bureau of health included not only water from sewers and estuaries but numerous mineral and aërated waters as well.

Publications and Investigations.

The usual routine examinations have been made and the following publications have been completed as a result of investigations recently completed:

"Studies in Plague Immunity," by Dr. Richard P. Strong. (Journal of Science, Vol. II, No. 3-B.)

"The Recent Trend of Immunity Research," by Dr. Harry T. Marshall. (Journal of Science, Vol. II, No. 4-B.)

"Infant Feeding and its Influence upon Infant Mortality in the Philippine Islands," by Drs. W. E. Musgrave and George F. Richmond. (Journal of Science, Vol. II, No. 4-B.)

"Gangosa in the Philippine Islands," by Drs. W. E. Musgrave and Harry T. Marshall. (Journal of Science, Vol. II, No. 4-B.)

"The Investigations Carried on by the Biological Laboratory in Relation to the Suppression of the Recent Cholera Outbreak in Manila," by Dr. Richard P. Strong. (Journal of Science, Vol. II, No. 5-B.)

"A Histologic Study," by Dr. Harry T. Marshall. (Journal of Science, Vol. II, No. 5-B.)

"The Etiology of Mycetoma," by Dr. W. E. Musgrave and M. T. Clegg. (Journal of Science, Vol. II, No. 6-B.)

"A Series of Cases of Tropical Infantile Dysentery, with a Hitherto Undescribed Bacillus as the Causative Factor," by Dr. Fred B. Bowman. (Journal of Science, Vol. III, No. 1-B.)

"An Investigation of the Quantitative Relationships Between Agglutinin, Agglutinoid, and Agglutinable Substances," by Dr. Y. K. Ohno. (Journal of Science, Vol. III, No. 1-B.)

"Peculiar Cases of Traumatism of Internal Organs, Some Due to Tropical Conditions and Practices," by Dr. Maximilian Herzog. (Journal of Science, Vol. III, No. 1-B.)

"The Influence of Symbiosis Upon the Pathogenicity of Micro-Organisms," by Dr. W. E. Musgrave. (Journal of Science, Vol. III, No. 2-B.)

"Studies of Cholera," by Dr. Harry T. Marshall. (Journal of Science, Vol. III, No. 2-B.)

"A Biological Study of the Water Supply of the Philippine Islands, with a Description of a New Pathogenic Organism," by Dr. Ralph T. Edwards. (Journal of Science, Vol. III, No. 2-B.)

"Filtration Experiments with the Virus of Cattle Plague," by Dr. E. H. Ruediger. (Journal of Science, Vol. III, No. 2-B.)

Serum Section.

In addition to the manufacture upon a large scale of antirinderpest serum and vaccine virus, cholera prophylactic, plague prophylactic, Gonococcus vaccine, Staphylococcus aureus vaccine, Staphylococcus albus vaccine, and Staphylococcus citreus vaccine were prepared in moderate quantities, while antidiphtheritic serum, antitetanic serum, anticholera serum, antityphoid serum, antiplague serum, and antidysenteric serum were made in amounts sufficient to supply the demand. Anthrax vaccine, tuberculin both human and bovine, and mallein were also prepared. Typhoid reagent, paratyphoid reagent, and cholera reagent (killed cultures) for agglutination were continually kept on hand. Agglutinating and bacteriolytic serums in liquid and dried form, for the purpose of the diagnosis of infectious diseases, normal horse serum, normal ox serum, and

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normal carabao serum, have also been added to the list of preparations of the laboratory.

The search for the organism or substance causing rinderpest, carried on by Doctor Ruediger, has not been successful, but he has shown that the infectious material, whatever it may be, which is present in the blood of sick animals, will not pass through any of the ordinary Berkefeld filters, while that from the peritoneal washings obtained with 0.25 per cent potassium citrate solution passes through all the Berkefeld filters, but does not pass through the Chamberland filters. These peritoneal washings are highly virulent and can be advantageously used in producing the required immunization in serum animals for the purposes for which virulent blood has heretofore has been employed. In fact, by their use the period of immunization of serum animals may be greatly reduced and the cost of feeding them, while they are still useless, correspondingly diminished.

The Entomological Section.

Mr. Banks has continued his work on Philippine mosquitoes, with special reference to their importance as agents for the transmission of malaria, and has shown that at least one species of the genus Myzomyia must be placed under the ban with Anopheles. He was successful in finding the source of malarial infection at Cervantes which has so long escaped detection.

Numerous pleas for assistance when crops have been attacked by insects have been received. In nearly every case an entomologist was sent to study the damage and to provide means for its prevention, if practicable.

The bringing of bumblebees from the United States in the hope that they might thrive in Benguet Province and fertilize red clover, which grows luxuriantly there, but does not form seed, was attended with much difficulty, as it was necessary to ship the bees in cold storage. A limited number were finally brought over alive and were liberated in the Trinidad Valley, where they were seen from time to time up to the end of the first month of the rainy season. Whether they have survived the torrential rains of August remains to be determined.

Interesting and important experiments have been carried on by Mr. Schultze in hybridizing the Ceylon silkworms, which have been successfully introduced here, with those from Japan, which do not flourish in the Philippines. It was hoped that a hybrid form might ultimately be developed which would deposit its eggs at frequent intervals, as does the Ceylon variety, while producing silk more closely resembling that of the Japan worms.

The hybrids produced much better cocoons than did the Ceylon variety, but only about one-tenth of their eggs hatched as promptly as do those of individuals from Ceylon. It is possible that the continued rearing of these hybrids accompanied by rigid selection will ultimately produce the desired result.

The following investigations have been completed during the year:

"Experiments in Malarial Transmission by Means of Myzomyia ludlowii Theob," by Charles S. Banks.

"New and Little Known Lepidoptera of the Philippine Islands," by W. Schultze.

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"Life Histories of Certain Coleoptera," by W. Schultze.
"A Mosquito which Breeds in Salt and Fresh Water," by Charles S. Banks.
"Biology of Philippine Culicidæ," by Charles S. Banks.
"Life Histories of Some Philippine Cassididæ," by W. Schultze.

The Botanical Section.

The work of identifying botanical material has been greatly facilitated by the trip of Mr. E. D. Merrill, who spent two months at Washington working over the Philippine material in the United States National Herbarium, and later visited the New York Botanical Garden, the Gray Herbarium at Cambridge, Mass., the Kew Herbarium, and the British Museum. He also stopped at Leyden, Geneva, and Florence, and worked for two weeks in Berlin.

An economic botanist has been added to the force of the section, and the economic botanical resources of the Philippine Islands will now be systematically investigated for the first time. Some economic work has already been done. Tanbarks, rubber-producing vines, perfume-producing plants, gums, resins, and medicinal plants have been collected in bulk. The chemists of the bureau have already made important investigations upon some of this material.

The economic botanist has studied and reported upon the sugar-cane smut which appeared in Laguna Province and has recommended measures for holding it in check which have given excellent results.

Doctor Copeland has continued his work on the bud rot of the cocoanut, which has assumed serious proportions in the Provinces of La Laguna and Tayabas.

To the herbarium 15,132 additions have been made during the year through collections of employees of the bureaus of science and forestry, miscellaneous Philippine collections, and foreign material received in exchange. The foreign exchanges are of exceptional value. The total number of mounted specimens now in the herbarium is 61,045, of which 39,163 are Philippine. A large amount of material is now in the hands of foreign specialists who have undertaken its identification. At present the chief obstacle in the way of pushing botanical work is lack of space in which to store and study collections when made.

The Collection of Natural-History Specimens.

The work of gathering material for the future natural-history museum has been steadily and successfully pushed.

During the past eight years the writer has received frequent inquiries as to the existence of any book which might be used in identifying Philippine birds, and has been forced to reply that no such book existed, the literature on the subject being scattered through scores of volumes, special monographs, and papers.

The great educational value of nature study in primary and secondary schools is now universally recognized, but such study has been rendered difficult in the Philippines on account of the entire lack of books suitable for use in identifying even our commoner plants or animals.

In view of these facts, I directed Mr. Richard C. McGregor to prepare a series of descriptions of all known Philippine birds, supplemented by a complete series of keys to be used in identification, This work will be published in two sections.

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The first is completed and the second is well under way. It is believed that it will have a considerable sale, not only on account of its value for use in the schools, but because it will be desired by many persons at isolated posts in the islands who will be glad to vary the monotony of their lives by studying the birds about them. Heretofore the study of Philippine birds has been possible only for specialists. Hereafter it can be undertaken by anyone able to read the English language.

The Chemical Laboratory.

Several members of the staff of the chemical laboratory have been kept engaged on problems of economic importance. Doctor Richmond has begun a study of the so-called Manila copal or almaciga, extensively used in the manufacture of varnish, and his work will materially aid in clearing up the confusion at present surrounding the identity of the gums thus designated and of dammar.

Important work has been done on Philippine oils and in determining the food values of certain oil cakes and seeds. Doctor Bacon has carried out investigations on Manila "elemi" and ilang-ilang, vetiver, lemon grass, and other plants producing valuable essential oils.

The writer found the fruit of *Pittosporum resiniferum*, commonly known as the "petroleum nut," in the mountains of Benguet, and sent a quantity of it to Manila. Upon distillation, 3 per cent of heptane, a very valuable oil for cleaning delicate fabrics, and 7 per cent of pinene, an oil employed in the manufacture of artificial camphor, were obtained.

Boneol, a near relative of camphor, has been isolated from Blumea balsamica, a common Philippine plant. A fragrant oil has been distilled from the leaves of Lantana. Other tropical perfume-yielding plants are under investigation.

The Philippine Islands are already famous for their ilang-ilang oil, which has never been successfully produced in any other country. Other equally valuable oils are obtainable from plants and trees native to the islands, and they should eventually form an important article of commerce.

Numerous areas along the coasts of many of the islands are covered with mangrove trees. An investigation of the barks from these trees shows a variation in the content of tannin from 17 per cent for Mindoro barks to 24 per cent for those from Mindanao.

The public appreciation of the work of the chemical laboratory is shown by the constantly increasing number of outside requests for analyses of gums, resins, soils, waters, fertilizers, foodstuffs, oils, rocks, and minerals. These applications have not been confined to the Philippines, but have come from neighboring countries as well.

Reference has already been made to the large number of cement tests. Numerous analyses of drugs suspected of containing opium have been made in connection with the administration of the opium law. Of carabao milk 270 analyses have been made for the bureau of health. There have been sufficient water analyses to occupy nearly all of the time of one chemist during the year.

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Division of Weights, Measures, and Mineral Analyses.

This division has standardized all provincial weights and measures in accordance with the provisions of Act No. 1519, known as "The Weights and Measures Act." A large amount of routine work, for which payment has been received, has also been done. Of gold assays, 621 have been made, as against 233 for the previous year. Assays for gold, silver, or platinum during 1908 numbered 772; copper, 245; lead, 10; zinc, 3; iron, manganese, nickel, tellurium, etc., 12. A large amount of work has been done on coals. In fact, most of the research work of this division has been on the local coals, cement rocks, and clays.

The following publications have been issued by the chemical laboratory:

"Preliminary Paper on Utilization of Some Philippine Oil-bearing Seeds," by George F. Richmond and Mariano Vivencio del Rosario. (Journal of Science, Vol. II, No. 6–A.)

"Philippine Terpenes and Essential Oils, Nos. 1 and 11, No. 11 on Ylang-Ylang Oil," by Raymond F. Bacon. (Journal of Science, Vol III, No. 2–A.)

"The Composition of Horlick's Malted Milk," by George F. Richmond and Dr. W. E. Musgrave. (Journal of Science, Vol. III, No. 2–A.)

"The Occurrence, Composition, and Radioactivity of the Clays from Luzon, Philippine Islands," by Alvin J. Cox. (Journal of Science, Vol. II, No. 6–A.)

"Starch Production in the Philippine Islands," by Raymond F. Bacon. (Journal of Science, Vol. III, No. 2–A.)

"The Relationship Between the External Appearance and the Ash Content of Philippine Coal," by Alvin J. Cox. (Journal of Science, Vol. III, No. 2–A.)

"Philippine Arrow Poisons," by Raymond F. Bacon. (Journal of Science, Vol. III, No. 1–A.)

"The Purification of Coconut Oil," by George F. Richmond. (Journal of Science, Vol. III, No. 1–A.)

The Laboratory for Food and Drugs Inspection.

The results of the work of this division have already been referred to in reporting on the work of the bureau of health. They will be found set forth in detail in the report of the director of the bureau of science, "Appendix D."

Division of Mines.

The force of this division has suffered serious loss by the death of Señor Jugo Navarro, who had been continuously in government service as a draftsman for about twenty-eight years, having served successively in the Spanish inspección general de minas, in the former mining bureau, and in the present division of mines; and in the death of Mr. Harry M. Ickis, who was treacherously murdered by wild men in the mountains of northern Mindanao. In spite of these losses and of the fact that it has gone through the year shorthanded, the division has completed a geological reconnoissance of the Batanes Islands, a triangulation survey of the Arroroy mining district in Masbate, a topographic survey and geological reconnoissance of the same district, an underground survey of the old Spanish mine known as "The Big Copper," in Lepanto, and a topographic survey and geological reconnoissance of parts of Mindanao.

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The following publications have been issued:

"A Description of the Geology and Mining Operations in the Camarines Gold Fields," by H. M. Ickis. (Journal of Science, Vol. IV, No. 2, and Far Eastern Review.)

"Notes on the Geology and Geography of the Baguio Mineral District," with map, by A. J. Eveland. (Journal of Science, Vol. II, No. 4–A.)

"The Petrography of Some Rocks from Benguet Province," by Warren D. Smith. (Journal of Science, Vol. II, No. 4–A.)

"The Gold Placers of Nueva Ecija," by Henry G. Ferguson. (Journal of Science, Vol. IV, No. 5, and Far Eastern Review.)

"The Sulphur Deposits of Leyte," by Maurice Goodman. (Journal of Science, Vol. IV, No. 4, and Far Eastern Review.)

"The Sulphur Deposits of Camiguin Island," by Henry G. Ferguson. (Journal of Science, Vol. IV, No. 5, and Far Eastern Review.)

"A Geological Reconnoisance of the Batanes Islands," by Henry G. Ferguson. (Journal of Science, Vol. IV, No. 5, and Far Eastern Review.)

"The Stone Quarry of Mariveles," by H. M. Ickis. (Journal of Science, Vol. IV, No. 7, and Far Eastern Review.)

"Notes on the Manila Lime Supply," by Maurice Goodman. (Journal of Science, Vol. IV, No. 7, and Far Eastern Review.)

"Contributions to the Physiography of the Philippine Islands: Batanes Islands," by Henry G. Ferguson. (Journal of Science, Vol. III, No. 1–A.)

"The Geology of the Compostella-Danao Coal Fields," with map, by Warren D. Smith. (Journal of Science, Vol. II, No. 6–A.)

"Note on the Occurrence of Rhyolite in Cebu," by Henry G. Ferguson. (Journal of Science, Vol. II, No. 6–A.)

There has also been issued the first Annual Bulletin of the Mineral Resources of the Philippine Islands.

In view of the increasing importance of the mining industry it is believed that facilities for making practical working tests upon from 3 to 5 ton samples of ore should be furnished. At the present time it is necessary for prospectors to send such samples to the United States or to foreign countries. This involves a heavy expense and much loss of time. To this end there should be provided a small stamp mill and a cyanide plant.

In the opinion of the writer there should be added a smelting and refining plant large enough to handle the gold produced in the islands. At present miners are obliged to turn their crude bullion over to the banks, which advance a part of its value and ship it to Pacific coast smelters or to the mint at San Francisco. The miners must wait for the balance of their money until returns are received from the smelter or the mint. They then receive the full value of their gold less the following charges: Interest at 8 per cent on the amount already advanced to them, smelter or mint charges, express, insurance, and a charge for the services of the bank.

These charges amount to more than 2 per cent of the total value of the bullion. It is believed that the bureau of science could do the refining at a small profit on a 1 per cent basis, the government might then buy the gold, and the miners would get their returns immediately, which would be a material advantage to many of them. An arrangement might be made by which the government could use gold bars in maintaining its gold reserve; or it could sell its gold in China and India, where the pure metal for use in the arts and trades often brings a premium. Any surplus remaining could be shipped to the United States mint. In my opinion it would be well worth while to extend this encouragement to the local mining industry.

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Division of Ethnology.

Dr. E. L. Miller, the chief of this division, was absent on leave during a part of the year, and the time of its remaining member has been largely occupied by museum work. Since Doctor Miller's return he has done a large amount of editorial work and has also performed inspection work in Neuva Vizcaya and Lepanto-Bontoc at the direction of the writer. Very valuable ethnological collections have been secured during the year by gift and by purchase.

Division of Fish and Fisheries.

The work on Philippine fish and fisheries outlined at the beginning of the fiscal year has been steadily prosecuted. The director of the bureau of science summarizes the ends in view as follows:

1. To secure as complete a collection as possible of all Philippine fishes, cataloguing the specimens under their native, English, and scientific names.
2. To study the foods, life histories, distribution, and migrations of useful fishes.
3. To discover the nature of the feeding and spawning grounds of the food fishes, to ascertain the period of spawning, the characteristics of the ova, the time required for, and the conditions favorable to, hatching.
4. To see what methods and apparatus are used by the natives in the catching, curing, and drying of fishes and to suggest such improvements as we know to be practicable.
5. To determine what protection can be given to young fish during the early stages of their growth.
6. To find places where fishes could be introduced profitably, or where pond culture could be inaugurated, or practical fish cultural methods carried out.
7. To ascertain what are the enemies and the causes of the disappearance of useful fishes.
8. To list the price paid in each locality for fresh and salted fish, the quantity secured, and the amount exported and imported.
9. To obtain figures as to the quantity and value of all other fishery products.
10. To make an investigation of the pearl, sponge, and coral fisheries.

This work has been carried on by Mr. Alvin Seale, aided by three Filipino assistants, one of whom is a skilled artist capable of accurately reproducing the colors of living fishes, which fade so quickly after death. Some 8,000 specimens of fish have been collected, including numerous new species and many others not heretofore recorded from the Philippines.

An idea of the abundance and variety of Philippine fishes may be gained from the fact that 212 different species were taken in the Gulf of Davao in a single day. Mr. Seale has devoted a considerable amount of time to the study of pearl fisheries with important practical results. He has also located sponge beds of commercial value and has discovered precious coral at several points.

He has combined in a happy manner valuable scientific work and commercial work of the most practical nature. He has been able to give many valuable suggestions in connection with legislation for the protection of pearl and sponge fisheries and has a large amount of data of a practical nature just ready for publication. It is greatly to be regretted that at this time ill health should compel his return to the United States. It is hoped, however, that he will be able to continue his work while there.

During the year 1907 the Philippines imported fish and other sea products to the value of ₱482,762, while exports of pearl shell were

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valued at ₱111,124; tortoise shell, ₱33,082; fish, ₱97,918, and trepang, etc., ₱62,762, giving a total of but ₱306,886. Fishery imports thus exceeded exports by ₱151,676, and that, too, when our seas swarm with fish, and especially with sardines, which are one of our principal imports. The importance of developing our fisheries would seem too evident to demand a discussion.

Only this brief outline of the work of the bureau of science can be given here. A full account of it will be found in the report of its director, "Appendix D."

WORK OF THE STEAMER ALBATROSS.

In his last annual report the writer outlined the arrangement which had been made for bringing the steamer *Albatross* to these islands and expressed a confident hope that there would follow important practical results which would greatly stimulate the development of Philippine fisheries.

With regret he is now obliged to state that these hopes have not been realized. For some reason the *Albatross* failed to bring the promised appliances for commercial fishing, such as the purse seine. It was understood at the outset that the members of her staff would furnish preliminary statements of important results for the benefit of the insular government, as well as for that of the public, which was to be reached through the medium of the Philippine Journal of Science and of the local press, but no such statements have been furnished, unless two notes on the occurrence of peridinium in Manila Bay are to be so considered.

No response has been received to a request for information likely to be of value in framing legislation for the protection of pearl and sponge fisheries made by the writer, while another request for information relative to commercial fisheries was forwarded to Washington for reply.

After some preliminary difficulties had been overcome Mr. Alvin Seale and two of his Filipino assistants were received on board the *Albatross*, but found they could not work there to good advantage, and were soon recalled at their own request.

So far as I am informed, the work of the staff of the *Albatross* has thus far consisted chiefly in the making of very extensive and scientifically very valuable marine zoological collections, but has not resulted in any discoveries of commercial importance.

The arrangement under which the insular government furnished coal for this vessel terminated on June 30. Fortunately the amount of coal consumed was far less than had been anticipated and provided for. When the material collected is finally disposed of the insular government will receive very valuable collections, which should fully compensate it for the expense which it has incurred. Meanwhile it must be confessed that the practical results obtained and communicated to the insular government have thus far been nil.

BUREAU OF LANDS.

This is the one bureau of the department of the interior which has had any material increase in its force during the year, the number of employees having been 637 on June 30, 1907, and 965 on June 30, 1908. This increase was the result of putting on additional survey

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parties, in order to bring about the early completion of the work of surveying the friar estates and of employing additional laborers for work in operating the irrigation systems on these estates.

New Work.

The scope of the work of the bureau of lands has been materially increased during the year by the enactment of Act No. 1854, which provides that the administration of government irrigation systems shall be controlled by the bureau of lands, and of Act No. 1875, which gives to the bureau of lands the general supervision of all surveys made for the court of land registration.

In actual practice, however, the work of the bureau has not as yet been materially augmented, as no new government irrigation systems have been completed, and the authority to supervise all surveys for the court of land registration was not conferred until July 1, 1908.

Transfer of the Office to Baguio.

In order to determine experimentally and beyond reasonable doubt the practical result of transferring office work to Baguio during the period of greatest heat, the writer ordered the director of lands to proceed to Baguio, taking with him such part of his office force as it might be practicable to transfer under the then existing circumstances. The director, assistant director, 7 American and 10 Filipino employees accordingly proceeded to the summer capital.

An office was established in one of the government cottages. Some of the employees lived at the Hotel Pines, while others occupied tents and boarded at a mess conducted by one of them.

Concerning this experiment the director of lands says:

> The result of this move * * * proved conclusively to my mind that it would be advantageous to the government to transfer as many of its employees to Baguio during the hot season as possible, for the conservation of health and the increased efficiency while there and after return to Manila. While no physical examinations were made of the employees of this bureau, the weights of individuals, taken upon arrival and at the date of their departure, showed a gain in each employee of from 5½ to 15 pounds. No illness was occasioned by the change of climate and conditions to the employees, and in fact it is believed that all benefited thereby. * * * As a partial offset to the expenditures of the bureau during its sojourn in Baguio, it may be stated that several employees have signified their intention of foregoing their vacation leave this year on account of their stay in Baguio, and as the value of the vacation leave of those employees who went to Baguio exceeds ₱3,000 for the year, it may be assumed that one-half of this will be saved on account of the Baguio trip, which will also reduce the expense of the bureau while in Baguio.
>
> In conclusion it may be stated that the result of the transfer of the bureau of lands to Baguio has been beneficial beyond expectations, and to my mind the expense of this experiment has been practically offset by the advantages to the employees and their increased efficiency to the government service, and I therefore recommend that for the coming year this bureau be authorized to transfer to Baguio as large a number of employees as accommodations may be provided for, provided that funds are available to pay the expenses, the rate of which expense per employee will be reduced materially in comparison with the expense for the past year. * * *
>
> I believe it possible under the best conditions to subsist and quarter Americans in Baguio for ₱75 per month, and Filipino employees for one-third of that amount, including first-class food and accommodations.
>
> Looking to the future, it is suggested that the bureau be authorized to begin the preparation of plans for a permanent building in Baguio sufficient to accommodate the entire bureau, with quarters for the employees.

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It was particularly interesting to the undersigned to note the rapid improvement in the condition of the Filipino employees during their stay at this delightful mountain resort. The number of Filipinos first taken was subsequently augmented, the average for the season being 14, and without exception they seemed to profit greatly by the change. The experiment will be continued this year upon a larger scale. In my opinion there is no room for doubt that the transfer during six to nine months of employees of those offices of the insular government, the nature of whose work is such that it can be done as well at Baguio as at Manila, would result in material economy to the government on account of the increased energy and efficiency of the employees.

Law Clerk Needed by the Bureau of Lands.

Long since the director of lands urgently requested authorization for the appointment of a law clerk. The request was denied upon the promise of the attorney-general to furnish the bureau with the services of a properly qualified attorney when required. Unfortunately the pressure of work in the attorney-general's office has been so great that it has been impossible to make such assignment and it has been necessary to forward each question requiring legal action to the attorney-general's office. This has necessarily resulted in much delay, while a number of cases upon which legal advice should have been obtained have been acted upon in the best judgment of the administrative officers of the bureau.

The legal questions arising in connection with the friar lands, water rights, mining claims, public lands, and lands which are the property of the insular government are numerous and important enough fully to occupy the time of a highly qualified attorney, and such an attorney should be at all times available for the work of the bureau of lands.

Friar Lands.

In the report of the director of lands (Appendix E) will be found a table showing for each estate the area in hectares and the estimated percentage at present occupied, the percentage surveyed, that sold or leased, the number of leases, the area covered by said leases, the annual receipts due under existing contracts, the receipts actually obtained during the fiscal year 1908, the annual interest on the purchase price at 4 per cent, the current expenses for the fiscal year 1908, the deficit or surplus, as the case may be, and the extraordinary nonrecurrent expenses of the fiscal year of 1908. A summary of this table shows the following totals:

	1907.	1908.
Area purchased.....hectares..	158,677	158,677
Percentage occupied.....	32	38.8
Percentage surveyed.....	60.1	100
Percentage sold or leased.....	22.6	26.7
Number of leases.....	22,229	20,652
Area leased.....hectares..	35,832	44,046
Annual receipts contracted for.....pesos..	241,937.24	290,160.88
Actual receipts.....do....	226,627.63	280,915.74
Annual interest on purchase price at 4 per cent.....do....	554,437.02	554,437.02
Administration expenses.....do....	85,620.09	94,606.37
Irrigation expenses.....do....	17,026.67	10,298.14
Total current expenses.....do....	657,083.78	659,341.53

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In the case of 19 estates expenses have exceeded receipts, the total deficit being ₱388,197.99, as against ₱430,456.15 for the fiscal year of 1907. On four estates the receipts have exceeded expenses, but the total surplus is only ₱9,712.20. There was no surplus on any estate during the fiscal year 1907. The net deficit is therefore ₱378,485.79, a reduction as compared with the previous fiscal year of ₱51,970.36.

It must be remembered that there were during the year additional heavy nonrecurrent expenses, incident to the completion of the surveys on all of the estates and important permanent repairs to irrigation systems on two of them. The expenditure for surveys was ₱239,087.51, as against ₱206,489.18 for the fiscal year of 1907, and for permanent improvement to irrigation systems, ₱20,949.63 as against ₱13,681.96.

NEW LEASES.

At the date of the last annual report nearly all leases were based on estimated areas. New leases have been issued upon the following plan:

When the actual area of a parcel has been determined upon, an estate which has been classified for sale, the annual rental charged is 5 per cent of the appraised value thereof. When the area of the parcel concerned has not been definitely determined, but the survey of the estate has been completed and the planimeter area of the parcel has been determined, the land is leased on this area on a basis of 5 per cent of the appraised value, or if the estate has not been classified, the same rate per hectare is charged as before, but the area is changed, as determined by the planimeter. In nearly all cases this has resulted in an increase of the rent for the parcels, as the original areas were almost invariably underestimated and the rental paid did not equal 5 per cent of the appraised value.

It was at first intended to charge 6 per cent of the appraised value, of which 4 per cent would have gone as an offset against the interest on the investment, 1 per cent for administration charges, and 1 per cent to the sinking fund, but it was found to be so difficult for many of the tenants to meet their obligations that the total charge was reduced to 5 per cent, which is the least amount that will cover the interest on the investment and the cost of administering these estates.

The director of lands anticipates that during the fiscal year 1909 the rentals contracted for on 15 of the estates will equal the interest and expenses. The San José and Isabela estates, being practically without tenants, can never become self-supporting through rentals unless some successful system of colonization can be inaugurated. As regards the other 6 estates, however, it is hoped that the giving of special attention to obtaining new tenants, as has already been done successfully in the case of the Muntinlupa estate, may result soon in making them nearly or quite self-supporting.

SALES.

The San Marcos estate has been disposed of, the Dampol estate is being sold, and the Matamo estate has been leased with the probability of sale. The Binagbag and Orion estates have been offered for sale and the director of lands anticipates that they will be entirely disposed of within a short time.

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Other estates will be offered for sale as soon as computation of the areas of the several parcels can be completed, but the volume of this work is very great. There are more than 50,000 parcels of land with an average of 8 angles to the parcel and the amount of computation necessarily involved is enormous. A good idea of the difficulty of the work involved in surveying these estates may be obtained by glancing at the plat of the Talisay-Minglanilla estate, which will be found in the report of the director of lands, "Appendix E." This estate of 300 hectares is divided into more than 1,300 parcels of typical irregularity.

The director of lands asked for an increase of ₱79,000 in his appropriation in order that this work might be pushed, but the Legislature declined to allow it. He estimates that if his present computing force remains available for this work the remaining estates may be offered for sale as follows:

During the six months ending December 31, 1908: Guiguinto, Banilad, Malinta, Santa Rosa, and Muntinlupa.

During the six months ending June 30, 1909: Isabela, Lolomby, Biñan, Tala, Naic, and San Francisco de Malabon.

During the six months ending December 31, 1909: Calamba, Santa Cruz de Malabon, and Santa Maria de Pandi.

During the six months ending June 30, 1910: Imus, Piedad, and Talisay-Minglanilla.

If, however, it is necessary to use this force for computing in connection with surveys for the court of land registration, further delay will invariably result.

AMENDMENTS TO FRIAR LAND ACT.

Certain important amendments to the friar land act have been made. This act made the provisions of chapter 2 of the public land act apply to sales of friar lands. The amount of land which could be sold to an individual was thus limited to 16 hectares, which would in very many cases have defeated the obvious intention of the act to allow tenants to secure their actual holdings, and would have delayed for many years the sale of large tracts, thus obliging the government to continue to pay interest on their purchase price. The provision of the public land act that surveys should be in regular subdivisions was entirely impracticable on occupied friar estates on account of the very irregular form of actual holdings.

The further requirement for advertising after application for purchase had been made imposed an entirely needless and unwarranted expense of from ₱20 to ₱100 on each purchaser, and the most liberal arrangement relative to payment possible was that it should be made in one installment after five years, with interest at 6 per cent.

Under the law as amended there is no limit as to the amount of land which may be purchased; necessity for advertisement is done away with and the land sold at its cost to the government up to the date of sale, deferred payments bearing interest at the rate of 4 per cent, which is the rate the government pays on its bonds. Before unoccupied lands are offered for sale the people of the towns in which they are located must be notified of the proposed sale by public crier.

Another very important amendment extends the time for making payments to within one year of the date of the maturity of the friar land bonds. The original act allowed ten years from the date of pur-

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chase, payments to be made, if so desired, in equal annual installments. The amendment extends the time from ten years to twenty-five years. This amendment seemed absolutely necessary, as few of the occupants of the poorer class lands would have been able to meet their annual payments under the former arrangement. This extension of time lies within the discretion of the director of lands, and it is not intended to apply it to urban lots as there is no necessity therefor, the difficulty having arisen in the case of agricultural lands, especially when at present nonproductive.

The law as amended authorizes payment in semiannual installments when desired, and this will be a convenience for some tenants.

FRIAR LANDS LOANS.

In my last annual report mention was made of the fact that the Commission has set aside a fund of ₱100,000 for the purpose of establishing a reimbursable fund to be known as the "friar lands loan fund," which should be available for the making of mortgage loans upon growing crops and salable commodities manufactured therefrom, work animals, warehouses, mill houses and machinery and other property, both real and personal, belonging to the actual and bona fide cultivators of the friar lands, and for extensions of the cultivated areas on such estates. The act further provides for the method of handling these funds by regulations to be approved by the secretary of the interior. The regulations made will be found set forth in the report of the director of lands, "Appendix E."

This legislation was enacted so late as to render it almost impossible to make funds available for the planting of that year's sugar crop, which should have taken place in November, December, and January. As it had been determined that loans from this small fund should be made only for the purpose of placing under cultivation sugar lands on the Santa Rosa, Calamba, Binan, Imus, San Francisco de Malabon, and Santa Cruz de Malabon estates, the amount placed was necessarily small. The total amount of loans made aggregates ₱11,690, of which amount ₱11,000 was used for the purchase of draft animals.

The disbursement of the money was on the order of the borrower direct to the cattle dealer in payment for animals purchased, and the borrower was thus prevented from disposing of the funds in any other manner than that agreed upon. At the present writing all of the animals purchased are alive and well, and the immediate result has been a considerable increase in the area cultivated for sugar, with very good prospects for an excellent crop, so that there should be no difficulty in repaying the loans.

Much difficulty has been experienced in getting the securities of friar lands loans into proper shape, for the chattel-mortgage law is new and its terms are not yet generally or well understood.

SPECIAL INDUCEMENTS TO OCCUPATION AND CULTIVATION OF FRIAR ESTATES.

Both the director of lands and the writer are of the opinion that upon the date of the cultivation of the friar lands depends the date of their final disposal, as the price necessarily asked is so high as to

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make it improbable that sales can, in most cases, be made before a steady income from crops is assured, so that purchasers can be certain of being able to pay on the installment plan.

At the request of the director of lands, the bureau of agriculture has worked two steam plows on the Santa Rosa estate during part of the year, with results which have been very satisfactory to the director and to the tenants and have materially increased the cultivated area. The original contracts with tenants provided that they should furnish fuel and water for the plowing engines and a part of the labor required. In nearly every case, however, they failed to furnish fuel and water, and the labor furnished was often insufficient in quantity and unsatisfactory in quality. Contracts hereafter entered into should provide for the furnishing of fuel and water, and probably of all labor as well, by the bureau of agriculture. The amount of plowing performed will be increased during the present year, and further inducements, such as improvements to roads and repairs and reconstructions to irrigation systems, will continue to be made.

RESERVATIONS REQUESTED ON FRIAR LANDS FOR INSULAR, MUNICIPAL, AND PROVINCIAL PURPOSES.

There have been a number of requests from insular, municipal, and provincial authorities that friar lands be reserved without compensation for various public purposes. The director of lands has contended that if portions of friar lands were needed by any department of the government they must be rented, or purchased and paid for, and that in no instance should portions of the friar estates be finally disposed of without reimbursing the friar lands fund for their full value, as determined by the usual method. In this contention he has had my full support.

FALSE RUMORS RELATIVE TO THE REPURCHASE OF PORTIONS OF FRIAR ESTATES BY FRIARS.

The rumors which have been current to the effect that the friars were repurchasing portions of the friar estates at a much less price than the government had paid for them are absolutely without foundation. Not one meter of land has been resold to the friars, nor will any land be sold at less than its cost price to the government, plus the cost of administration to date of sale, with interest at the rate of 4 per cent per annum to the date of sale.

POLITICAL AND OTHER DIFFICULTIES.

It is gratifying to be able to report that political agitation has interfered less with the administration of the friar estates than during any previous year.

Many difficulties have, however, been encountered by friar lands agents, as for instance in the case of the agent of the Naic estate, on whose recommendation an application to lease a large tract of land, really for the purpose of cutting the wood on it, was denied. The applicant then employed agents to steal the wood. They were detected, and the agent filed criminal charges against those responsible.

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They reciprocated by filing charges against the agent in a justice of the peace court for defrauding the government. Bail was fixed at ₱3,000, and was furnished. Immediately thereafter the agent was charged with estafa, and ₱300 bail was required, and the agent was informed that other charges would be filed against him until he could no longer furnish bail, the evident purpose being to jail him and get him out of the way. The person primarily responsible for the taking of the wood also filed a civil suit, claiming damage to his character and for stopping him from selling wood of the government. Careful examination has failed to show foundation for any of these charges, which seem to have been filed as a result of his endeavoring to carry out specific instructions from the director of lands to stop the theft of firewood from the estate.

REPAIRS TO IRRIGATION WORKS.

Apart from ordinary repairs, 20,400 meters of irrigation ditches have been cleaned and reexcavated on the Lolomby estate, and on the Santa Maria de Pandi estate repairs have been made to 9 dams and more than 13,000 meters of irrigation ditches have been cleaned or reexcavated.

In addition to the maintenance and repair work performed by this bureau, the bureau of public works has direct supervision of the more extensive repairs to dams, ditches, tunnels, and canals. A large amount of work has been performed by the latter bureau during the year on the estates in Cavite Province, and surveys and estimates for two new projects on the Imus and Naic estates, respectively, have been prepared.

A detailed statement of the conditions which have prevailed on each of the estates, including the work performed, will be found in the report of the director of lands, "Appendix E."

HOMESTEADS.

Homestead applications to the number of 2,166 were received, or 503 less than during the previous fiscal year. There is much indifference among the Filipinos toward acquiring title to land, and so long as they are allowed to occupy public land they seem to care little whether or not they have title.

Experience has shown that the presence of a land inspector to inform them of the necessity and benefit of acquiring legal titles results in the filing of many applications which otherwise would not be made. An additional cause for the falling off in homestead applications is found in the marked tendency among owners of large estates to discourage the more ignorant when they seek to take up land on their own account. One of the common procedures employed to this end is to exhibit written documents and plans seeming to indicate that the person who exhibits them is the owner of a vast territory in the region where the homesteader desires to secure a homestead. The plans and documents may be grossly fraudulent, but the ignorant native has no means of knowing this and becomes discouraged, believing that there is no public land remaining.

The director of lands has discovered that homestead applications are not infrequently made in the names of persons who have no

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knowledge that such applications have been filed. Applicants who have been requested to point out the land applied for in order that an inspector may determine whether it is more valuable for agricultural than for forestry purposes have stated that they had never signed any application. These cases seem to indicate attempts fraudulently to obtain land through bogus homestead applications, and if sufficient evidence can be obtained prosecutions will be inaugurated.

There has been a material increase in the number of homestead applications approved, that for the year being 1,459, or nearly double the total allowed for the three previous years.

Public Lands.

SALES.

Only 51 additional sales applications have been received. They cover an area of but 583 hectares. The total sales applications received up to June 30, 1908, number 219, covering an area of 5,564 hectares. In view of these facts, could anything have been more groundless than the fear that the Philippine agricultural lands would be bought up in large quantities under a liberal land law?

Of the total number of applications to purchase received since the promulgation of the public-land act, 105 applications covering 1,599 hectares have been rejected, canceled, or withdrawn.

The director of lands renews his recommendation that individuals or corporations be permitted to purchase as many contiguous tracts of land as they may desire at different times, provided the total area does not exceed the legal allowance. In this way persons or corporations with small resources can purchase land and add to it as circumstances permit without the necessity of encumbering themselves at the outset with the price of the maximum allowance which they might not be able to cultivate for a number of years. It is undeniably true that up to the present time the greatest improvements made on land purchased or leased from the government have been made by such persons or corporations of limited means, and in view of these facts I heartily concur in the recommendation of the director of lands.

LEASES OF PUBLIC LANDS.

There has been some increase in applications to lease public lands, the number being 56, as against 22 for the previous three years. Of the 56 applications received, 46 are from the island of Mindanao.

FREE PATENTS TO NATIVE SETTLERS.

There have been 2,045 free patent applications, covering 9,836 hectares, as against 8,607 received during the previous fiscal year. This decrease is believed to be due in part to the fact that there has been but one public-land inspector employed, and he has been in the field but a small portion of the time. The single inspector who was in the field the previous year secured some 3,000 applications. Further reasons for the decrease are that a majority of those entitled to the benefits of chapter 4 of the public-land act have probably filed their applications, while others have failed to learn that the time within

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which they may make applications has been extended until January 1, 1909, although every effort has been made to spread this information.

Nearly one-tenth of the applications received have been rejected, in nearly every case because of noncompliance with the law relative to occupation and cultivation. Numerous applications have been received which, if their statements are to be credited, show that the applicant began the cultivation of the land desired some years before he was born. Such obviously false statements are probably more the fault of the persons making out the applications than of the applicants, many of whom are very ignorant, and applicants are always given an opportunity to set themselves right by making affidavits correcting such obvious errors.

TOWN SITES.

Town-site surveys have been completed at Sibul Springs, in Bulacan, Dansalan, Parang, and Cotabato, in the Moro Province.

The survey of the proposed town site of Davao, in the same province, is now in progress.

In the Baguio town site 44 additional lots have been sold at prices ranging from 4 centavos to 15½ centavos per square meter, the minimum sale price being 2 centavos above the minimum at any previous sale and the maximum being 2½ centavos above the the maximum at any former sale.

UNPERFECTED TITLES.

During the year the director of lands has received 384 notices from the court of land registration of cases in which applicants have claimed patents under chapter 6 of the public-land act. After investigation he has requested the attorney-general to enter opposition in 70, appearance in 36, and 12 are still pending examination. On 260 it was not deemed necessary that any special action be taken to protect the rights of the government, the claims being apparently just.

SURVEYS.

The termination of the surveys on the friar estate has made possible an increased number of surveys under sections 58 and 66 of the public-land act. There have been executed 172 surveys covering 234 parcels of land under the provisions of the former section at an average cost of ₱4.27 per hectare and 145 surveys covering 227 parcels with a total area of 9,330 hectares have been executed under the provisions of the latter section at a cost of ₱21,212.99.

MINERAL AND MINING CLAIMS.

During the year 5 patents for lode gold claims have been issued and 1 patent for a placer copper claim.

There have been advertised and are now ready for patent 28 other lode claims containing gold and 5 placer claims. Additional claims, 14 in number, are now ready to be advertised and 3 have been surveyed and applications for patent will probably soon be made therefor.

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The following table shows the claims filed during the year, so far as information has been received. However, owing to the extremely lax manner in which the officials at present performing the duty of mining recorders render their reports this information is not complete.

	Entries filed.
Coal claims	90
Lode claims for gold	508
Lode claims for silver and lead	11
Lode claims, character not stated	25
Lode claims, copper, rubies, silver	1
Placer claims for gold	83
Placer claims for guano	8
Placer claims for limestone	1
Placer claims for manganese	6
Placer claims for ocher	1
Placer claims for sulphur water	2
Placer claims, character not stated	5

Full details as to these claims and the regions where they are located will be found in the report of the director of lands, "Appendix E."

There has been a good deal of activity in mining during the past year. The number of claims which have been patented and those pending patent, the formation of new mining corporations, the importation of a few modern stamp mills and dredgers, and the undertaking of investigations by several well-known mining experts are all encouraging signs, but so long as the Philippine mining industry must struggle along under the incubus of sections 33 and 75 of the act of Congress of July 1, 1902, active and healthful development can hardly be anticipated. The recommendations relative to these sections which have hitherto so often been made are therefore repeated and emphasized.

RECLAIMED LAND.

A survey of the area reclaimed from Manila Bay by filling is in progress and the land should be offered for lease during the coming year. A survey has also been ordered for the reclaimed land at Cebu, but has been stopped pending the final location of the custom-house and the railroad right of way. When these points have been determined it will be completed as soon as possible.

INSULAR GOVERNMENT PROPERTY.

The director of lands, who is the custodian of lands and property belonging to the insular government, is collecting rents on the land occupied by the building owned by the telephone and telegraph company and by the building formerly occupied by the assistant director of navigation. He is arranging as rapidly as possible for registering title to all of such property, and at an early date will request the attorney-general to file petitions in the court of land registration on behalf of the insular government for titles to land in Rizal Province, an experimental farm at Iloilo, a coal yard in Manila, a small lot in Paco, Manila, and a large tract of land situated in Bontoc, Province of Lepanto-Bontoc.

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Road Surveys and Monument Locations.

The work of carrying out surveys of provincial roads, locating provincial and municipal boundaries, and establishing permanent monuments so that known fixed points may be obtained to which all future surveys made may be referred is progressing steadily.

Surveys of 9 municipalities located in the provinces of Bulacan, Palawan, and Moro have been completed. Trail and river reconnoissance and topographic sketching of 557 kilometers in the Province of Benguet has been completed during the year, and 376 kilometers have been executed in the Province of Lepanto-Bontoc. In Bulacan, 82 kilometers of accurate provincial road surveys have been completed, and 51 kilometers of road surveys have been made on the islands of Cuyo and Busuanga.

These surveys will be platted upon polyconic projection sheets, on a scale of 1 in 50,000, and as fast as surveys of private property are executed in the provinces they will be transferred to the polyconic sheets. This will ultimately result, by a process of elimination, in a map showing definitely the boundaries and area of the public lands, but the completion of such a map will be the work of many years.

San Lazaro Estate.

In the settlement of questions relative to the administration of and title to various properties heretofore in dispute between the Roman Catholic Church and the government of the Philippine Islands, a portion of the San Lazaro estate was ceded to the Archbishop of Manila, and the value of the estate remaining in the hands of the government for administration was reduced from ₱2,327,740.95 to ₱2,177,428.95, while the contracted rentals were reduced from ₱57,217.90 to ₱48,263.04.

The income from this estate should be much larger than at present, but until many of the lots are filled and the city of Manila puts the street system into a passably decent condition and extends the electric light and water systems to the estate, comparatively little further improvement can be anticipated. With a view to the registration of the estate, a survey has been made which includes a block and lot survey, except for those lots which are too low for residence purposes.

The blocks which have been subdivided have been rearranged. Buildings have been moved to conform to the limits of the new lots, and the ground has been leased according to the new subdivisions, thus leaving the streets free for public purposes. When the property is registered, it will be registered by blocks, so as to insure the future keeping open of necessary streets and alleys.

The completion of the subdivision survey will materially decrease the cost of administering the estate, which now includes 2,383 lots, of which 1,824 are occupied and 559 vacant. The tenants number 1,199, 1,164 being tenants at will, 29 having leases of six years, and 6 having leases of more than six years.

The decrease of 1½ per cent in the rentals collected from the estate is entirely due to the transfer of a portion of the estate to the church. This transfer was effected November 8, 1907, but as a matter of

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courtesy the director of lands continued to collect all rentals until December 31, 1907.

Had this portion of the estate not been transferred there would have been an increase in rentals over the previous year of approximately 10 per cent. Against tenants there were brought 217 suits in ejectment, of which 181 were compromised on the payment of rent due and costs, and 5 are pending. In only 21 cases have renters been dispossessed.

Further details as to the work of the bureau of lands will be found in the report of the director, "Appendix E."

THE BUREAU OF AGRICULTURE.

Control of Animal Diseases.

The most important work of the bureau of agriculture during the year has been that for the purpose of bringing under control dangerous communicable diseases affecting domestic animals, more especially rinderpest and foot-and-mouth disease.

The director of agriculture states in his annual report that conditions as to the prevalence of such diseases have been distinctly worse than during the previous fiscal year. The writer is by no means satisfied that this statement is entirely correct. The fact is that there has now come a great change in public sentiment relative to the work of the bureau of agriculture for the control of these diseases, and this change is not without its attendant embarrassments.

A large proportion of the more ignorant inhabitants have until very recently regarded veterinarians and their work with dread, and when their domestic animals began to sicken and die have often made strenuous efforts to conceal the fact. Now a large proportion of the people have come to appreciate the value of the work done and are quick to report the presence of disease so that it may seem to be more prevalent even when this is not the case. At all events demands for assistance have come faster than they could be met.

The steady increase of dangerous communicable diseases among animals imported from neighboring countries, and especially from Hongkong, made necessary the passage of Act No. 1760, entitled "An act to prevent the introduction into the Philippine Islands of dangerous communicable animal diseases, to prevent the spread of such diseases within the islands, and for other purposes." This act prohibits the admission into the Philippines of shipments of diseased animals without the direct authority of the director of agriculture, and confers upon that official ample powers relative to the quarantining of imported animals as well as of those raised in the country.

Under the rules now in force for the carrying out of this act, when three successive shipments of infected animals have been received from any port the director of agriculture does not allow further infected shipments from such port to enter. In actual practice this has resulted in the temporary complete suspension of the cattle trade between Hongkong and Manila, but during a period of many months previous to this suspension practically every shipment of cattle received from Hongkong was infected on arrival and it was obviously worse than useless to hope for success in eradicating animal diseases while this state of affairs continued, for if these infected shipments were to

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continue to enter and if the animals composing them were to be scattered throughout the provinces the result would be the constant appearance of new foci of disease.

In reality this act ought to have been passed much sooner. As it was, foot-and-mouth disease, introduced from Hongkong, infected 25 provinces.

Since it took effect conditions have improved quite steadily and the chief embarrassment which confronts us at present is that due to insufficient personnel and serum to meet the demands of the public. The employment of additional veterinarians has been authorized. The facilities for the production of serum will soon be greatly increased by the completion of stables for 260 bullocks at Alabang, while the cost of its production has been considerably reduced by the installation at the bureau of science of a new, large, and very powerful centrifuge for separating serum from blood and by the discovery of Doctor Ruediger, of the same bureau, that physiological salt solution injected into the peritoneal cavities of virulent blood animals may be drawn off when the animals are bled and is then more effective than is the blood itself in producing the necessary reaction in serum animals prior to obtaining from the latter the blood from which rinderpest serum is obtained. The value of each virulent blood animal is thus more than doubled.

As appropriations have now been made for the establishment of quarantine stations at Manila, Cebu, and Iloilo, the three principal ports of entry for cattle, it is believed that within the next year much greater progress will be possible than has heretofore been made in ridding the islands of dangerous, communicable animal diseases. In fact the situation has already very greatly improved, and (on September 15) there is not a single important outbreak of rinderpest in the islands.

SALE OF SERUM ANIMALS.

The serum animals eventually attain such a high degree of immunity that it becomes necessary to inject a very large amount of virulent blood in order to produce any reaction whatever. It eventually ceases to be profitable to obtain serum from them and they are sold at auction. The faith of the public in their immunity is demonstrated by the keenness of the competition for them. Animals which would be worth from ₱60 to ₱80 if not immunized, readily bring ₱100 to ₱130.

Upon the completion of the new serum stables at Alabang and the transfer of the herd to that place it is proposed to continue the present stables on the San Lazaro estate and to use them for immunizing animals belonging to private individuals, making a reasonable charge to cover expenses.

PROPOSED SALE OF SERUM.

There have been very numerous demands for serum from persons who desired to have it on hand as a precautionary measure or who wished temporarily to immunize their herds. Heretofore it has seldom been possible to sell serum to such persons, as all that could be manufactured was imperatively needed by the bureau of agriculture.

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With the completion of the new stables, which makes possible a material increase in the size of the serum herd, and with the more rapid and complete extraction of serum which will be obtained by the large new centrifuge just installed, it should be possible to produce a good deal more than is required for the ordinary uses of the government, and the surplus will be sold at reasonable prices to anyone who may desire to purchase it.

ESTABLISHMENT OF A VETERINARY COLLEGE RECOMMENDED.

The undersigned is fully convinced that the first college of the proposed new university to be established should be a college of veterinary medicine and surgery.

In the past it has always been difficult to obtain a sufficient number of properly qualified veterinarians from the United States. New men upon arrival are necessarily compelled to spend a considerable amount of time familiarizing themselves with tropical animal diseases and with the methods which have proved most successful in combating them. They must also learn a good deal of Spanish, and, in fact, it is not until they have acquired a considerable knowledge of the local native dialects and have had a large amount of experience in dealing with the people in the provinces that they reach their maximum usefulness.

Men born and reared in the islands must always have a great advantage over those brought in from the outside, if equally trained, and the facilities for giving the best of training can be provided at a relatively small cost.

The course of study should be of four years' duration. The first two years can be given in the Philippine Medical School as at present organized with little or no additional expense. The last two years can be provided for in connection with the Manila quarantine station, where a veterinary hospital should in any event be established and where technical instruction can be given by the veterinarians in charge. Until such time as conditions greatly improve there should be a competent veterinarian in every province in the Philippine Islands, and to this end the government should provide one or more free scholarships for each province, with the proviso that the beneficiary in each case shall serve the government, at a moderate salary, for at least four years after graduation. The present arrangement, which allows but one veterinarian to each four or five provinces or islands of considerable importance, is highly unsatisfactory.

Heretofore the most serious difficulty in the way of combating dangerous communicable animal diseases has been the hostile attitude of the more ignorant people of the islands. The great change which has now arisen is both gratifying and encouraging. The undersigned felt that it was certain to come in the end, but did not expect it so soon, or he would have tried to have the bureau of agriculture better prepared to meet the largely increased volume of work resulting from it.

PUBLICATIONS.

With some hesitation the issuing of a monthly publication known as the "Philippine Agricultural Review" has been entered upon and 5 numbers have appeared. They have been extremely well received,

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the demand for them being so great that the Spanish edition of the first 3 numbers is already entirely exhausted. The Review is proving of the greatest value in bringing the bureau of agriculture more closely in touch with the people.

Farmers' Bulletin No. 15, on "Tobacco Growing in the Philippines," Press Bulletin No. 11, on "Seed Distribution, Need of Diversified Farming," etc., and a circular on "Kapok" have also been published. The first of these was issued in English, Spanish, Ibanag, and Ilocano, the second in English and Spanish, and the third in English, Spanish, Ilocano, Tagalog, and two dialects of Visayan.

Agricultural Extension Work.

Under the superintendency of Señor Pablo Tecson, agricultural extension work has progressed satisfactorily. As in the case of the publication of the Agricultural Review, the object of this work is to bring the bureau of agriculture more closely in contact with the people of the islands and with the practical problems confronting agriculturists here. Señor Tecson travels quite steadily in the provinces and has brought widely to the attention of the people the results of the work of the bureau in treating and checking the spread of dangerous communicable animal disease, the advantage of improved methods of cultivation and of the planting of certain special crops, and the methods by which seeds or plants of improved varieties of fruits, vegetables, cereals, fiber plants, etc., may be obtained from the bureau of agriculture, and in various other ways has rendered valuable services.

He has carried on investigations in the provinces of Batangas, Nueva Ecija, Bulacan, Negros Occidental, and Tarlac, reporting the results of his work to the bureau. These investigations have in each locality covered such subjects as soil conditions, possible irrigation facilities, existing agricultural products, products which might profitably be introduced, and the condition of live stock and poultry.

Crop Reporting and Statistics.

The bureau of agriculture has gradualy organized quite an effective force for crop reporting and the gathering of agricultural statistics, and at the request of its director the weather bureau, which was by law required to make crop reports, and which had rendered valuable services considering its limited facilities, has been relieved from the necessity of continuing this service.

While many obstacles have been encountered, both by the weather bureau and by the bureau of agriculture, it can be said that the number of crop reporters is steadily increasing, that the character of the reports rendered is steadily improving, and that the Philippine Agricultural Review affords a quite satisfactory medium for the dissemination of the information thus obtained.

Mechanical Plowing.

Experiments in the use of mechanically propelled plows have steadily continued and have served only to confirm the conclusion hitherto reached, namely, that wherever there exists a considerable tract of reasonably level land which has been freed from stumps

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and large stones and which is on or near a suitable water supply steam plowing can be carried on to good advantage and at moderate cost.

The bureau of agriculture has had two steam plowing outfits at work for private individuals on the Santa Rosa friar estate, where much of the arable land is rolling or hilly and is divided into comparatively small plats by streams, ditches, hedges, and wooded areas. Although these persons were under contract to provide dry fuel, water, and a certain amount of labor, in nearly every instance they failed to furnish the fuel and water promised and in not a few cases were very dilatory about providing labor. In some places water was difficult to obtain. Nevertheless large areas hitherto overgrown with cogon or runo grass were brought under cultivation and the owners of the land seem well satisfied with the results. However, the necessity of bringing in coal for fuel and of using the plowing engines as stump pullers materially increased the cost of plowing over what it would have been had the owners provided dry wood and properly cleared their land.

Just at the beginning of the rainy season the bureau of agriculture secured a Hart-Parr petroleum plowing engine. This engine has several pronounced advantages over steam plowing engines. Its relatively light weight (19,000 pounds) facilitates its passage over bad ground and weak bridges, and as it consumes comparatively little power in propelling itself, a large part of the energy generated is available for traction purposes. It can be started and stopped almost instantly, and the loss of time involved in getting up steam in the morning and drawing fires at night is avoided. No large transportation problem is involved in keeping it supplied with fuel. It uses very little water and, in fact, when it starts in the morning carries kerosene and water enough for an entire day's run, so that it can work uninterruptedly.

The engine has proved to be readily manageable and the traction results obtained are most satisfactory. It only remains to demonstrate whether or not it will endure continuous service under the severe conditions which prevail in these islands. The early advent of the rainy season has prevented any conclusive answer to this question. As soon as the land dries off sufficiently to make plowing possible this engine will be put at hard and continuous work and the results noted. So far as our experiments have gone, it has proved most satisfactory.

Maguey.

Interest in maguey planting continues unabated, and the bureau of agriculture has furnished both Hawaiian and Philippine plants for distribution in large numbers, having sent out 42,475 of the former and 1,422,640 of the latter.

Guinea Grass.

Guinea grass is by far the most important plant which has recently been introduced here. It produces an extraordinary amount of highly nutritive fodder which is greedily eaten by horses, cattle, and pigs. At the beginning of the calendar year 3,026 square meters of land at the Singalong station were planted with this grass. During

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the following six months 4 cuttings of fodder, aggregating 21,543 kilos, which is equivalent to 78 tons per hectare or 31½ tons per acre, were made.

When it is remembered that the soil at Singalong is poor and sandy, and that the vitality of the plants was apparently unimpaired after 4 cuttings, the extraordinary nature of this result will be appreciated.

Another plat of land at this station containing 2,533 square meters was planted during the first week in April. This crop followed corn. It was given one light irrigation, but no fertilizer. The first cutting was made during the first week of June and weighed 9,455 kilos, the plat producing at the rate of 41 tons per hectare in sixty-one days. Reports from plants sent into the provinces and grown on rich soil are highly satisfactory. A small quantity of hay was made from guinea grass and fed to native ponies at the Singalong station with good results.

Some 70,000 roots have been distributed during the year and the demand for them now exceeds the supply. Fortunately this plant stools rapidly, and even those who receive it in very limited quantities can soon obtain a good supply by practicing root division.

Miscellaneous Products.

A full statement of the results obtained by the bureau of agriculture in growing kapok, rubber, corn, alfalfa, sunn hemp, cowpeas, velvet beans, native leguminous plants, Paspalum dilatatum, teosinte, rice, beets, cabbage, sweet potatoes, tomatoes, lettuce, avocado pear, grapes, oranges, kumquats, bananas, lemon grass, vetiver, and roselle will be found in the report of the director of agriculture, "Appendix F," together with detailed statements as to the work carried on under varying conditions of soil and climate at the several experiment stations of the bureau.

Seed and Plant Distribution.

As stated by the director of agriculture in his annual report, the object of the bureau in distributing seeds and plants is to furnish to private individuals sufficient seed and small plants of species and varieties not readily obtainable elsewhere in the islands, to allow a fair trial, and if found satisfactory, to furnish a source from which they may thereafter raise seed for future crops. The distribution of seeds of field crops has been largely confined to corn, cotton, guinea grass, kapok, peanuts, rice, sesasum, maguey, and tobacco. There is a constantly increasing demand for these seeds and for various other plants of economic importance, such as coffee, cacao, spices, rubber, and fruits. Guinea grass is at present attracting more attention than any other crop except maguey.

In distributing vegetable seeds only such varieties are sent out as have been shown by experience to give fair success under ordinary, or even poor, cultivation. These are beans, beets, cabbages, carrots, corn, cucumbers, eggplant, lettuce, mustard, okra, pease, peppers, radishes, tomatoes, and turnips.

While the distribution of flower and ornamental plant seeds may not materially increase the prosperity of the islands, it at least enables

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the Filipinos to gratify their highly developed taste for beautiful things by rendering the grounds about their homes attractive, and the distribution of such seeds has been made to a limited extent. The entire stock of seeds available for this purpose was exhausted and a number of requests necessarily remained unfilled.

Establishment of a Forage Plant Provided for.

Heretofore it has been necessary to bring forage into the Philippines in enormous quantities. The yearly cost of the forage imported by the United States Army is approximately ₱1,224,758, while the city government of Manila alone is spending ₱129,840 annually for forage for its work animals. The quality of much of the forage imported is poor and prices are steadily increasing, notably in the case of that coming from Australia. In view of these facts, investigations were long since begun with a view to demonstrating the practicability or impracticability of manufacturing in these islands forage of good quality at a reasonable cost.

It has been conclusively demonstrated that the ingredients for preparing mixed fodders of identical chemical composition with the best of those imported can be produced locally in abundance, and that the total cost of growing these materials and manufacturing the fodders should be far below the prevailing prices of the imported articles. It is believed to be entirely practicable greatly to reduce the expenses of the United States Army, of the insular government, and of the city of Manila, to save heavy expense to individuals, and to keep in the islands large sums of money now annually sent abroad by growing and manufacturing fodder here.

A modern fodder manufacturing plant has been purchased and will soon be installed at a suitable point on the Pasig River, and the farmers on this river and on the Laguna de Bay, who enjoy the benefits of water communication with Manila, will be encouraged to grow guinea grass, sorghum, corn, teosinte, and certain leguminous plants by the certainty that their products will find a ready sale at the forage plant. The United States Army and the city of Manila have promised to use a considerable amount of the new fodders from the start and rapidly to increase their orders if these fodders prove satisfactory, as it is believed will certainly be the case.

Under reasonably good management this plant should prove not only a source of revenue to the bureau of agriculture but a very important factor in improving economic conditions in the Philippines.

Further details as to the work and plans of the bureau of agriculture will be found in the report of its director, "Appendix F."

THE WEATHER BUREAU.

The work of this bureau has long been so completely organized and so well conducted that there is little need of change and small opportunity for improvement. Its previous high efficiency has been steadily maintained.

FOREIGN CABLE FACILITIES.

The weather bureau now receives by cable 2 daily observations from each of 21 foreign stations, of which 10 belong to the Japanese meteorological service, 5 are situated on the China coast, 4 are on

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Formosa, and 3 are in Indo-China. These messages are transmitted free of charge by the Eastern Extension, Australasia and China Telegraph Company, and the Great Northern Telegraph Company.

It is to be regretted that the Commercial Pacific Cable Company and the Deutsch-Niederlandische Telegraphen-Gesellschaft have declined to follow this wise and generous policy and thus make it possible to get two observations daily from the islands of Guam and Yap. As the cost of such frequent messages would under existing arrangements be prohibitive, the weather bureau stations on these islands are heard from only when weather indications show the existence of typhoons in their vicinity.

EARTHQUAKES.

Of 227 microseismic movements and of perceptible earthquakes, 153 have been reported by the weather bureau from different regions in the archipelago during the year, but only one earthquake of any violence has occurred, and that, fortunately, caused no great damage.

TRANSFER OF THE CROP-REPORTING SERVICE.

Heretofore the weather bureau has been charged with the responsibility of utilizing its observers for the maintenance of a crop-reporting service. This was at the outset a logical arrangement, as the newly created bureau of agriculture did not have a sufficient number of provincial representatives to make it possible for it to assume this work. Later, however, as the work of the bureau of agriculture developed, the director of the weather bureau requested that the director of agriculture take over the crop-reporting service, believing that such transfer would result in increased efficiency. Act No. 1833 of the Philippine Legislature authorized this change.

EXTRAORDINARY PUBLICATIONS.

Apart from the regular serial publications of the weather bureau the following have appeared during the year:

"Rainfall in the Philippines," by Rev. Miguel Saderra Maso.
"Typhoon Warning Code of the Manila Observatory," by Rev. Jose Coronas.
"Publication of Old Observations," which is a report of the series of observations made in 1874 and 1875 not heretofore published, which have now been issued in accordance with the policy of completing the printed record.

DIFFICULTIES.

The chief difficulty which besets the weather service in these islands is the interruption to telegraphic communication, which occurs through the breaking of telegraph wires in the forests during heavy storms and the breaking of cables by earthquakes and other submarine forces.

The existing rules of the telegraphic service in regard to employees working on Sundays and holidays afford a further obstacle. In this connection the director of the weather bureau says: "Typhoons do not respect either the Day of the Lord, or the laws creating holidays; nor are they particular about having their coming announced before they strike," and he feels that he can hardly be justly held responsible for results if for any reason the wires fail to work.

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The scarcity of competent third-class observers is another difficulty which is proving serious. The work required of these observers is of such a nature that most of their time is left free, and it was expected that their salary of ₱30 per month would only supplement what they would earn in other ways, but unfortunately many of them have fallen victims to the belief only too common in these islands that they must live on their salaries, or rather that the government ought to pay them salaries large enough to furnish them a living. This can not well be done in this instance, as the sum above mentioned is adequate compensation for the work they are called upon to perform.

Further difficulties arise through the necessity of granting leaves of absence to first and second class observers, the number of both being so limited that no substitutes are available to take the place of those who go.

METEOROLOGICAL AND GEODYNAMIC OBSERVATORY AT BAGUIO.

Through the liberality of the Society of Jesus, quarters have been provided for a meteorological and geodynamic observatory on Mount Mirador, at Baguio, and equipment has been purchased. It is anticipated that the building will be completed and most of the instruments installed by January, 1909. This observatory will, in effect, be rather a branch of the Manila central observatory than a secondary station, and its situation on a mountain top 4,970 feet above sea level is particularly well adapted to the carrying out of certain special lines of work, including variation of rainfall, humidity, temperature, and evaporation with varying height; differences of temperature and evaporation on windward and leeward slopes, and seismological observations covering far distant and local earthquakes.

When Baguio is provided with an electric power plant, it is proposed to establish on Mount Mirador a wireless station which will be most useful in sending typhoon warnings to vessels on the China Sea, and possibly to points on the neighboring Asiatic coast.

The results of the work of the weather bureau during the year have been so concisely stated in the report of the director, "Appendix G," that it would be useless for me to endeavor further to condense them for the purpose of this report.

RECEIPTS AND DISBURSEMENTS OF BUREAUS.

A statement of the receipts and disbursements of each bureau of this department will be found in the annual report of its director.

Very respectfully,

DEAN C. WORCESTER,
Secretary of the Interior.

To the PHILIPPINE COMMISSION,
Manila, P. I.

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APPENDIX A.

REPORT OF THE DIRECTOR OF HEALTH.

DEPARTMENT OF THE INTERIOR, BUREAU OF HEALTH,
Manila, July 20, 1908.

SIR: Pursuant to instructions from the secretary of the interior for the Philippine Islands, I have the honor to submit herewith a report upon the operations of the bureau of health from July 1, 1907, to June 30, 1908, the same being an official statement in general terms of the health and medical work carried on by the bureau for the period named, and the ninth annual report of this division of the government of the Philippine Islands.

PRELIMINARY CONSIDERATIONS.

The ground gained in former years in the advancement of public-health work has been held and, in certain directions, more strongly fortified. Yet from the standpoint of permanent and definite advancement in public sanitation, this year has not been so satisfactory as the preceding. Many projected plans had to be abandoned for lack of time.

The resources of the bureau, all of which ought to have been available for substantial, concrete sanitary work, have been largely diverted along temporary lines in combating and preventing cholera, smallpox, diphtheria, and measles. Success in this feature of the work, however gratifying the immediate effects may be, is not of a permanent character, and can not be classed as real sanitary progress.

In view of the fact that within the last few years there has been such a widespread interest awakened in tropical sanitation, it would be appropriate and interesting on this occasion to review at some length the situation in the Philippine Islands, but owing to the pressure of a multitude of administrative duties, only a brief outline of the work can be submitted.

ACKNOWLEDGMENT.

The report for last year was read and commented on so generally by the medical and lay press that, as a matter of expressing his appreciation, the director of health would be gratified to have the opportunity to discuss more fully the character of the sanitary work and health conditions of the Philippine Islands, and to correct many erroneous impressions that have heretofore prevailed. So many letters have been received that it is practically impossible to answer them all individually; therefore advantage is taken of the opportunity to incorporate into this report a few items of information which have been requested, and, at the same time, to make a general acknowledgment to the sanitarians, the physicians, and the press for their helpful and friendly attitude toward the progress of sanitary science in the Philippine Islands.

RÉSUMÉ OF SANITARY WORK SINCE AMERICAN OCCUPATION.

Ten years ago the Philippines figured but to a slight extent on the sanitary map of the world, hence it is not surprising that little should be known of them in this respect.

When the Spanish war was over, and the Americans, who had come across the ocean in obedience to destiny's call, had oriented themselves with regard to their surroundings, they found they were occupying an archipelago composed of some 3,000 islands, extending from 21° 25′ to 4° 45′ north latitude, and from 116° to 127° east longitude, with a combined area greater than the aggregate area of the States of Pennsylvania, New York, New Jersey, and Maryland, and possessing a coast line equal to that of the United States. In this vast tropical region there are two prevailing winds during the year, one known as the "northeast monsoon," which blows almost continuously from November to April, and the other known as the "southwest monsoon," which blows from April to November, during which period destructive cyclones sometimes occur. These winds and other meteorological conditions produce a climate

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varying greatly in different portions of the islands. The rainy season on some parts of the eastern coast occurs during one monsoon period, while along the western coast it occurs during the other. In general, it may be said that the dry season, in which there is an average rainfall in Manila of 375.5 millimeters, corresponds to the northeast monsoon, and the rainy season, during which there is an average rainfall of 1,137.1 millimeters, corresponds to the southwest monsoon. The temperature varies from an average of about 80° F. in the lowlands, to about 75° F. in the mountains of Benguet, where the summer capital of the Philippine Islands is located. The lowest temperature of the islands is about 65° F. and the highest rarely goes above 95°. In the mountain region it ranges from 35° to 80°. Low temperature, that great aid to sanitation in the Temperate Zone, is not a factor of influence, the conditions with reference to warmth and moisture being such that mosquitoes and other insects, together with bacteria and parasites, thrive throughout the entire year.

With the exception of the Cagayan and Dagupan valleys, in the island of Luzon, and the Cotabato Valley, in the island of Mindanao, the interior regions of the islands are very sparsely inhabited, most of the towns being found along the coast line. The Cagayan River, in Luzon, is navigable for a distance of 200 miles. The soil in these valleys is very fertile, the Cagayan Valley being often compared by travelers to the Valley of the Nile, as the river overflows its banks and fertilizes the country. This is mainly interesting from a sanitary standpoint, because of the fact that on the subsidence of the water from the inundated districts, stagnant pools, in which mosquitoes breed in abundance, are left.

It is estimated that at the time of American occupation the population of the islands was about six and one-half millions, and that the death rate was so high that the population has been practically at a standstill for many years. There are no records in existence in the Philippine Islands from which even a rough estimate could be formed as to what the actual death rate was, but judging from the mortality at present, with the positive knowledge that a large reduction has been brought about, it would appear that it certainly must have been over 50 per 1,000. At the time of American occupation at least 40,000 persons per annum died of smallpox.

So far as could be ascertained by a careful sanitary survey, not one artesian well existed. The examination of water from practically every section of the Philippine Islands shows that all wells, rivers, springs, and other surface sources contain amœba, except at such health resorts as Sibul Springs, where repeated examinations have proved that the water is free from these organisms.

There was no sewer system in Manila, a city of over 200,000 inhabitants, and the night soil and household waste matter were disposed of in a most crude manner.

The water supply for the city was derived from a river, the watershed of which was inhabited by about 10,000 people, who considered it their inalienable right to bathe both themselves and their animals in the river and otherwise pollute the same.

In the city some 31 miles of esteros or canals existed, which were nothing more than open, filthy, water courses, into which nearly all waste material, especially the liquid, found its way.

There was practically no provision for the care of the insane, a common custom being to tie them to a stake with a dog chain.

With the exception of about 200 lepers that were taken care of at the San Lazaro Hospital, Manila, and the Palestine Leper Colony, Cebu, for charity's sake only, some 4,000 or more roamed about the islands at will.

A single grave was often utilized as many as 4 or 5 times, the excavated remains being thrown carelessly about or heaped into an "osario," or bone pile, in order to make room for the more recent corpse.

The number of cases and deaths from beriberi in penal institutions was very large. Malaria claimed its victims by the thousands. On account of there being no adequate quarantine system, diseases like plague, cholera, leprosy, and smallpox were frequently introduced from the great infected centers of the Orient. Amœbic dysentery claimed its victims by the hundreds, without any hope of relief. Devastating cattle diseases were literally sapping the wealth out of the country. Formidable epidemic diseases were prevalent; cholera sometimes claimed as many as a thousand victims per day in the city of Manila, and at times, according to reports, depopulated entire villages in the provinces. Bubonic plague must have been present, as it was found in Manila a short time after American occupation.

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Pleasing as it might be to be able to state that all of the foregoing conditions have now been entirely eliminated, yet in all candor it must be said that the work is so enormous, the funds so inadequate, and trained helpers so few that much yet remains to be done. Still, when it is remembered that the Philippine Islands are 11 times larger than all the remaining tropical possessions of the United States, and that it requires over six months to have even small requisitions for supplies from the United States filled, and that the financial resources of the country are meager, it will not be considered remarkable that the conditions have not yet become perfect.

Soon after occupation a general campaign of cleaning and scrubbing, so characteristic of the American sanitarian, was inaugurated throughout the islands. Sanitary rules and regulations were crystallized into compact shape, and enacted into laws. Some 300 boards of health were organized, so that the needs of the various municipalities could be systematically studied and results secured. Garbage collection, sewage disposal, street sweeping, the isolation of dangerous communicable diseases, the systematic vaccination of the people against smallpox, and many other sanitary measures received attention, and improvement soon became everywhere apparent.

The vaccination of over 6,000,000 people in a more highly educated country with the best of transportation facilities would be no small matter, but it would indeed be an insignificant task compared with such a project in the Philippine Islands, where reverse conditions obtain. The undertaking here was begun by permitting each municipality to vaccinate upon its own account, but after several years' faithful trial this scheme was abandoned, and a plan of systematic vaccination by groups of about 25 vaccinators directly under the charge of a competent physician was started in various parts of the islands. The method found to work best was to commence on the border of a province and systematically work across it until every person was vaccinated. In the provinces near Manila, which represent a population of about 1,000,000, there had been 6,000 or more deaths from smallpox annually. Last calendar year after such vaccination was completed, not one death occurred from smallpox.

To-day dozens and dozens of artesian wells exist, and in many localities the death rate has dropped as much as 20 per 1,000 through the general use of artesian water.

The new gravity system, which brings water from an uninhabited watershed, will be completed within a few weeks. This will practically insure Manila against a serious cholera epidemic by relieving those conditions which have heretofore necessitated a patrol of the shed by United States troops to prevent pollution of the water supply.

A modern ice plant produces daily 100,000 pounds of ice and 5,000 gallons of distilled water, which is sold to the public by the government at a nominal price.

The new sewer system for Manila, which is being constructed at a cost of about ₱4,000,000, will be ready for use next year. In the meantime, however, the sewage is being disposed of by a system of septic tanks, which have proved satisfactory and have deservedly earned for Manila the name of a city without odors. There is no longer any pollution of the canals or the Pasig River. The 31 miles of esteros, or canals, have been dredged and cleaned of the filth which has accumulated for several centuries. The moat which surrounded the Walled City has been filled up and is now being parked. Thousands upon thousands of malodorous wooden structures erected over tight vaults have been replaced by the modern enameled closets, and hundreds of acres of lowlands have been raised above tide level and drained.

Hygiene is taught in the 3,500 public schools of the islands, and the simple rules of health are repeated like a catechism in thousands of Filipino homes.

The hospital of 160 beds established for the treatment of civil employees is soon to be succeeded by a general hospital, now in process of erection, for which the sum of ₱780,000 was appropriated for the buildings alone, the site having been already purchased some years ago. This institution will not only be large enough to meet the needs of the government employees, but will be used as a general hospital as well.

A modern hospital building for the insane is already completed, and facilities are available for the care of 500 of these unfortunates.

In establishing the leper colony upon the island of Culion one of the most extensive segregations recorded in history is being undertaken. Of the 4,000 lepers estimated to be in the Philippines only about 1,000 remain to be collected. It may be remarked in this connection that the policy of the segregation of

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lepers bids fair to be fully vindicated. Experience during past years was that in those provinces from which the lepers were removed more than 300 new cases of the disease appeared annually; at the present time not more than 50 new cases occur. This result has fully justified the policy of segregation which was commenced two years ago, and it can be confidently asserted that the increase in the total number of lepers has been permanently arrested and that from now on a steady decline will take place. The fact of the control of this most loathsome disease is irrefutable evidence of the benevolent character of the work being done in these islands under the auspices of the United States Government, and although it is only a very small part of the work of the bureau of health yet it is worth many times over the entire cost of the maintenance of the whole bureau.

The burial of the dead is now properly regulated in considerably over half of the provinces, and partially regulated in the others.

The free distribution of quinine has greatly reduced the incidence of malaria. Some drainage and other methods of mosquito extermination have been undertaken, but the lack of funds and trained assistance has prevented much headway in this direction.

Great advances have been made in prison sanitation. Diseases like beriberi have been almost eliminated and the death rate brought down to normal.

The value of the work done here in the past is perhaps best shown by the fact that while many cities in Japan and other oriental countries were having over 500 cases of smallpox per week, the city of Manila had only a few cases per day, and that while Hongkong and other near-by ports are struggling with their annual outbreaks of plague, the Philippine Islands are entirely free from this disease.

The methods of combating that great devastating disease, cholera, have been so improved that even with the funds and help available in the Philippine Islands, the number of cases and deaths, in comparison with former epidemics, is greatly reduced. This fact has done much to allay public apprehension; consequently, panics of fear have practically disappeared, and a community in which cholera makes its appearance moves along in the even tenor of its way, as if nothing unusual had happened.

Sanitary measures in the Philippines are as productive of satisfactory results as they have been in other countries and communities in which they have been faithfully applied; the death rate has, no doubt, been reduced by 10 or more per 1,000, which in itself means the saving of many thousands of lives. The morbidity has also been lessened, but even after all this has been brought about, the feeling still remains that more should be accomplished.

However desirable the necessary cleaning up and ordinary sanitary measures may be to a community, still experience in the Philippine Islands teaches that such work alone is not nearly so effective in improving the public health as has heretofore been believed to have been the case. Experience in eradicating yellow fever from Cuba by the elimination of the mosquito, and not by the removal of filth, the destruction of the rat for the eradication of plague, the killing of anopheles for the suppression of malaria, all go to demonstrate that there are other sanitary measures possessing equal if not greater influence on the improvement of public-health conditions than the mere cleaning up of filthy places.

VISIT OF THE SECRETARY OF WAR.

The Hon. William H. Taft, at that time Secretary of War, visited the Philippine Islands during the months of October and November, 1907, and although the official and social demands upon his time were most exacting, he was ever ready by word or action to show his profound interest in every agency or effort, great or humble, for the uplifting of the Filipino people, to whom he is, indeed, a father and friend. The cause of medical education, public sanitation, and hygiene received marked attention and recognition from him.

He visited the Philippine Medical School, the nurses' training department of the Philippine Normal School, the headquarters of the Society for the Protection of Infants, the reservoir and dam of the new water supply for the city of Manila, the Baguio Sanitarium Hospital, and many other places affording a basis for judgment as to the extent of progress during his absence. He inquired into every feature of the work and expressed his approval of all that had been done. So greatly pleased was he with Baguio that upon his return to Washington he recommended to the Congress that the present army post at

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that point be made a brigade post, and that the tour of Philippine service be increased by the addition of another year, so that by rotation each organization could be given at least six months' duty at Baguio, thus affording the troops the benefit of a temperate climate.

MANILA AS A MEDICAL CENTER.

In view of the excellent facilities which the proposed new hospital, together with Bilibid, San Lazaro, and the other hospitals already existing in the city of Manila, will offer for the study of tropical diseases, and in view of the large staff of the bureau of science engaged in research work, Manila is destined to become the medical center of the Orient.

There has already been organized here an association, composed of the leading medical men of the East, for the purpose of studying tropical diseases.

MEDICAL SCHOOLS.

There are two medical schools in the Philippine Islands, the medical department of the Santo Tomás University, established in 1872, and the Philippine Medical School, established in 1907. Both institutions have been signally successful during the past year. Instruction in the medical department of the Santo Tomás University is given in Spanish, while that in the Philippine Medical School, a government institution, is conducted in English. The faculty of the latter institution, while conforming with the requirements of the Association of American Medical Colleges, has, in the matter of its curriculum and length of course, conformed to the standards of Great Britain. The local hospitals furnish adequate clinical facilities, and the excellent laboratory equipment of the school is supplemented by that of the bureau of science.

Vacation courses in practical sanitation were conducted at the sanitary stations of the bureau of health.

The medical department of the Santo Tomás University has made some important changes in its faculty and in its course of study, with a view of meeting the stricter requirements of the government, which are to be enforced hereafter, with reference to the relation of the students to the medical examining board. In the Philippine Medical School the professors of the elementary branches give their entire time to the work, thus becoming personally acquainted with every student and with his needs and capabilities. The policy of eliminating unprepared students has brought the institution up to a very high grade of efficiency. No tuition is charged and no favors are bestowed. It is the purpose of the government and of the faculty to maintain in the Philippine Islands a high-grade medical school for the education of the future physicians of the country.

The government has established a free dispensary and a 100-bed hospital in connection with and under the immediate control of this institution.

NEW HOSPITALS.

The requirements of the medical and sanitary work in the Philippine Islands received substantial recognition in last year's appropriation bill, the sum of ₱780,000 being appropriated for the construction of a general hospital in the city of Manila, in addition to the amount previously appropriated for the site, both appropriations making about ₱1,000,000 available for hospital purposes. It is proposed to merge the present Civil Hospital into the new institution, and to provide wards for the indigent and for such pay patients as may apply for treatment. The building will be of reenforced concrete, and will be located upon the exposition grounds next to the buildings of the bureau of science, so that the best laboratory facilities will be readily accessible. Considerable time was given to the study and comparison of the hospital plans and systems of other tropical countries, as well as those of Europe and America, with reference to the respective merits from a comparative standpoint, and especially with regard to their adaptability and suitability to the conditions in the Philippine Islands. The final decision was that the hospital should consist of an administrative building and five 2-story separate pavilions, which will have a capacity of 30 patients upon each floor, or 60 patients per pavilion. The present arrangements are for 300 beds, but the plans are so drawn as to admit of the erection of additional pavilions as soon as appropriations become available, without involving a change in the original scheme.

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The construction of this hospital has been delayed by the failure to have the plans completed and bids solicited. The corner stone of the foundation was laid March 2, 1908, by the secretary of the interior, in the presence of the governor-general, members of the Commission, the Philippine Assembly, the foreign delegates to the Philippine Islands Medical Association, and many other distinguished persons. Addresses were made by the governor-general and the secretary of the interior; also by Sir Allan Perry, of Ceylon, and Dr. Fernando Calderon, of Manila.

This institution, in addition to being a general hospital for the entire Philippine Islands, will also serve as a training school for nurses and a clinical hospital for the Philippine Medical School.

The new Civil Hospital at Baguio was almost ready for occupancy at the close of the year. The medical work at Baguio has increased so rapidly that the need of additional facilities is felt most acutely. The new hospital will have accommodations for at least 30 ward and 14 private-room patients.

The University Hospital, on Calle Magdalena, in the district of Trozo, Manila, conducted under the auspices of the Protestant Episcopal Church of America, has been completed and equipped, and has accommodations for 25 charity and 10 pay or private-room patients. This hospital is situated in the center of the poor section of Manila and is constantly filled to its capacity. Over 2,500 out-patients are treated at the dispensary each month. The bureau of health furnishes the greater portion of the medicines used for the indigent poor.

The Methodist Episcopal Church, through its mission service, has opened a 50-bed hospital for women and children at No. 35 Calle Quesada, Tondo, to to be known as the "Mary J. Johnston Memorial Hospital." The building was donated by Mr. D. S. B. Johnston, of St. Paul, Minn., but the land, furnishings, and equipment were purchased by the Methodist Foreign Mission Society, which also supports the institution. The hospital is under the medical supervision of Dr. Rebecca Parrish, who has charge also of the free dispensary connected with the institution.

The dispensary and hospital were opened temporarily in the Deaconesses' Training School building December 10, 1906. From that date to the close of the present fiscal year there were treated 4,100 dispensary cases, 127 hospital cases, and 441 out-patients who were unable to visit the hospital. In addition, 953 surgical dressings were applied and 15,305 prescriptions filled.

The new building is located on the Tondo beach, a district of the greatest destitution and squalor in the city of Manila, and will confine its work to the poor people almost exclusively, although a few pay beds have been established for the benefit of those among the better classes who would not seek admission as charity patients. The bureau of health supplies a portion of the medicines used in the charitable work of this institution.

A training school for nurses has been established and two American trained nurses employed as instructresses. Four Filipino nurses, who have been with the institution since its opening, act as assistants.

PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

The fifth annual meeting of the Philippine Islands Medical Association was held in the Philippine Medical School building in the city of Manila, February 26, 27, 28, and 29, 1908, under the direction of Dr. William E. Musgrave, the president. This meeting was the most successful in the history of the association, and was honored by the presence of a number of foreign delegates, among whom were:

Dr. R. D. Keith, physiologist and assistant pathologist, Straits and Federated Malay States Medical School, delegate from the Straits Settlements.

Dr. Francis Clark, medical officer of health, and delegate from His Britannic Majesty's colony of Hongkong.

Prof. Taichi Kitajima, M. D., of the Infectious Diseases Institute, delegate from His Imperial Japanese Majesty's Government.

Dr. Cheng Hao, delegate from His Imperial Chinese Majesty's Government.

Sir Allen Perry, the honorable principal civil medical officer of Ceylon, and delegate from Ceylon.

Prof. T. Ishigami, M. D., of the Ishigami Institute for Infectious Diseases, Osaka, Japan.

Doctor Hays, delegate from Siam.

Lieutenant Ryley, R. A. M. C., Hongkong.

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Doctor Vassal, of the Institut Pasteur, Nhatrang, Annam, delegate from Indo-China.

Dr. H. Fraser, of the Institute for Medical Research, Kuala Lumpur, delegate from the Federated Malay States.

These gentlemen all delivered addresses on subjects pertaining to medical science.

The opportunity offered for conference with so many medical men engaged in sanitary work in other parts of the Orient was productive of much good. The discussions were mutually beneficial, and will no doubt have a direct influence in reducing the quarantine restrictions between the several countries. The study of the great tropical problems connected with dysentery, hook worms, beriberi, and public water supplies was in many respects enhanced. The advantageous results of these meetings were so apparent that it was decided to organize a Far Eastern Medical Association, in order that the field of this work might be still further broadened.

It is greatly to the credit and honor of the medical profession of the Philippine Islands that an association of such broad scope and wide influence should have had its origin in Manila.

SCIENTIFIC RESEARCH AND SANITATION.

While the commonplace demands on the force and time of the employees of the bureau of health are quite sufficient to keep everyone busy, several scientific investigations have been made in public-health matters.

The diseases of uncinariasis, amœbic dysentery, cholera, and trachoma have been the subject of special attention, and the many treatments for leprosy which are constantly recommended have nearly all been given a faithful trial. So far, the X-ray treatment has given the most hope.

The bureau at this time is arranging and classifying the statistical data of 1,500 cases of leprosy in all stages of the disease, and when finished it will be the most complete clinical record of this malady known to this office. The patients are being thoroughly examined in every part of their bodies for lesions, and every fact carefully noted. It is hoped that the completeness of this record may be sufficient to serve as a basis for valuable scientific deductions.

The treatment of amœbic dysentery by a new method, in which simaruba and sodium sulphate are the principal remedies, has given far more satisfactory results than any other treatment that has heretofore come to the notice of this bureau. Sleeping sickness, yaws, and gangosa are still under investigation, and elephantoid diseases are to be taken up shortly. Investigation into the prevalence of albinism in the Philippines is now in progress.

Septic vaults, traps, and other fixtures necessary for the disposal of waste have received careful study and a number of changes have been made. The use of the unsatisfactory bell trap has been discontinued and a new design substituted.

The field of public sanitation is so large and interesting that scientific research work is sure to become more and more the line of prescribed duty for the health officer or public sanitarian. The duty of chasing pigs out of back alleys, cleaning water-closets, and sniffing the air for bad smells may be left under proper advisory supervision to nonprofessional employees; the sanitarian has other and greater duties.

The great problem of the future in the Philippines is to fortify the masses so as to withstand and conquer the germs of disease. These organisms are so numerous that to seek to preserve the public health by a warfare against them alone would be about as logical as to destroy oxygen in order to prevent conflagrations instead of erecting fireproof buildings.

Mention has been made elsewhere in this report of the prevalence of uncinariasis among the people as revealed by the investigation carried out among Bilibid prisoners and of the special crusade to be made against this disease.

This office is convinced that the proverbial reputation for indolence gained by the natives of tropical countries is due, in a large measure, to the prevalence of the hookworm disease, and that the excessive infant mortality may be in part traced indirectly to the same cause.

Nature has provided all of her creatures with the innate power and means of preservation against their foes, but when all their vital resources are taxed by constant drain on the nutritive supplies, like an impoverished and starving army, they must succumb before their enemies. The system can not withstand

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even a slight attack that, under more favorable conditions, would be of little consequence, nor can remedies against disease be expected to be effectual under such unfavorable circumstances.

The central idea is that the masses must be prepared to conduct their own defense through their own vital forces, and that the most far-reaching and influential cause undermining the health of the Filipino people and making them easy victims of cholera, tuberculosis, and other less formidable diseases is the general prevalence of intestinal parasites, especially the hookworm, and that it is against this condition that special efforts are to be directed, and from which the greatest measure of success is to be expected.

ARMY MEDICAL BOARD FOR THE STUDY OF TROPICAL DISEASES.

The former Army Medical Board for the Study of Tropical Diseases, composed of Capt. Percy M. Ashburn, Medical Corps, and Lieut. Charles F. Craig, Medical Corps, whose terms of service in the Philippines had expired, was replaced by another, composed of Capt. James M. Phelan, Medical Corps, and Lieut. Henry J. Nichols, Medical Corps.

Captain Ashburn and Lieutenant Craig conducted many important investigations, and in addition to the work mentioned in last year's report other results which they obtained were published by the Surgeon-General of the Army and by the medical press. The new board is now actively engaged in its work and has already reported upon the condition of the liver in schistosomiasis and upon oidiomycosis.

The vast amount of clinical material under the control of the bureau of health has been placed at the disposal of the board, and upon several occasions its members have accompanied officers of this bureau to the provinces while engaged in the collection of lepers, as among many of the cases that are presented as alleged lepers there are found some of the rarer tropical diseases, which afford most interesting studies for research work.

In addition to the work done by the board, Capt. Eugene Whitmore is carrying on extensive investigations in opsonic therapy, particularly with chronic forms of gonorrhœa, with which he has had considerable success.

THE IMPORTANCE OF THE COOPERATION OF THE MEDICAL PROFESSION IN PUBLIC-HEALTH WORK.

Every physician desires to advance the cause of the public health in his community, and especially among his own patients. The organized medical profession would regard with disdain any practitioner of medicine who would oppose measures of public hygiene or treat with indifference any effort in the interest of the public health. A large number of diseases may be prevented by sanitary science, and it should be said that the profession as a whole, though it be to the personal disadvantage of its individual members, nobly supports the health officer in his work. With the broadening field of opportunities there arises an urgent demand for closer cooperation. The sins of the average medical man against the interests of public health are those of omission rather than commission. It is easy to forget and sometimes easier to follow the lines of least resistance. Thus a physician will often permit erroneous theories to pass uncontradicted rather than go to the trouble of explaining away the error and replacing it by the truth. This charge is abundantly substantiated by the daily complaints from a misinformed public regarding "sewer gas" and "neighborly" death-dealing odors, which are supposed to cause everything from mumps to bubonic plague and cholera. These false ideas are exceedingly formidable obstacles in the progress of sanitation. It is difficult for the health officer to convince those holding such ideas that there is more safety in personal hygiene than there is in waging eternal warfare against one's neighbor. Had the family physician taken the trouble to explain, these false theories would not have remained to make the health officer's life a burden and to be actually productive of harm through ignorance of the true cause of disease, thus rendering the holders of such opinions practically helpless in applying the proper measures for the protection of themselves and those whom they seek to save.

Physicians can not overestimate the influence that a silent, acquiescent, attitude has on matters of this kind, while their positive stand for the truth, reinforced by tact and patience, really the only reliable source of correct in-

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formation to which a large part of the public may find access, is a force that can not be measured.

Bacteriological knowledge has made rapid progress within the last few years, but the popular belief in "bad blood," thick or thin, as may be desired, is through the influence of quack advertisements and the least-resistance attitude of the medical practitioner almost as firmly entrenched in the minds of these people as if there were no science of bacteriology.

Proper measures of personal hygiene, in which the family doctor is and always will be the chief instructor, will go a long way in keeping off many diseases which are not usually classed as preventable. These measures are so simple that it lies within the power of everyone who has been properly instructed to lessen his chances of contracting these border-line maladies, and the physician, by virtue of his relation to the public, has an immense opportunity, not only actively to cooperate with the health officer but to render an invaluable service to his patients and to the cause of sanitation.

Physicians are in a position to render another important service to the health authorities. The public often misunderstands the purpose of sanitary ordinances and public-health measures, and directs its objections, antipathies, and anathemas against the health officer, whom it holds responsible. An explanation, or even a kind word from the family physician, in such cases, works wonders for the cause, and enhances, at the same time, the estimation in which the doctor is held by the community. The people should know that public-health work is not limited to garbage collection, removal of dead animals, cutting weeds and grass on vacant lots, keeping goats out of back alleys, and deodorizing foul smells.

Much greater benefit would accrue to the public if the health officer could devote more time to vaccinating, to spreading the gospel of pure water, such as is obtained from artesian wells; to instructing the people how to cure and prevent tuberculosis, how to combat the hook worm, how to avoid amœbic dysentery, how to reduce the infant mortality, how to improve the milk supply, how to detect and prevent adulterated food from being sold, and how to meet situations which have a vital influence on the individual, the race, and the nation.

One of the principal duties of a health organization is the collection, arrangement, and study of statistical data pertaining to the social and hygienic conditions affecting the public.

Every well-regulated city has certain health ordinances requiring prompt reporting of births and deaths and the suspicion or presence of dangerous, communicable diseases. Such ordinances are violated perhaps more frequently than any others, and by the very persons who should be the most interested in their enforcement—the physicians.

Vital statistics can not be more accurate or more valuable than the individual returns from which they are compiled. They, like mechanical structures, can not be stronger than their weakest points. Hence it will be seen that the utmost accuracy is essential.

In the Philippines one of the principal troubles has been the collection of statistics with regard to births. This may be partly explained by the fact that a large number of children are born without medical attendance, but with proper credit given in this direction, it is still astonishing to contemplate the insignificant value that is attached to a birth certificate by a great many physicians. Birth records, slightly regarded as they are, are among the most valuable documents in the files of vital statistics. They often figure in suits, legacies, and documentary proofs. They are in various ways, also, a source of important statistical deductions, which could not be arrived at upon any other basis.

It is a strange thing, too, that doctors will promptly report smallpox, plague, or diphtheria and never think of typhoid fever and tuberculosis. If physicians could be made to realize the importance which health officers attach to such reports, they would undoubtedly regard the matter in a different light and lapses of memory in that direction would be less frequent.

The value of the health service in a community is largely determined by the attitude of the practicing physicians toward such service. Efficiency and value are not always synonymous terms. The health officer's work may be all in vain, unless he receives proper support; hence arises the urgent, important necessity for a closer, more professional, and a more personal cooperation between the medical practitioners and those who have been intrusted with the duties and responsibilities of officially protecting the public health.

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THE PURPOSE OF SANITARY STATISTICS.

The committee of the American Health Association on demography and vital statistics in their sanitary relations, in a report made in 1902, states that deaths are registered primarily for legal purposes; that is, for the protection of certain rights and privileges of individuals and of families. This is the first and most important use of records of deaths and the sort of utility which appeals most strongly to the public. A subsidiary, though highly valuable, use of registration is the employment of the data in compilation of sanitary statistics, by which the local, state, and federal health services may direct their measures, improve their methods, and gauge their results.

This office concurs with Doctor Woodward, of Washington, who said in an article in the Michigan Journal of Vital Statistics for March, 1908, that the use of registration as a source of vital statistics is paramount to its use for legal purposes, and that if the public health should be the chief concern of the statesman, as has been wisely said, and if vital statistics serve to increase the efficiency of measures tending to preserve and to promote such health, the importance of registration is greater from a statistical standpoint than from the standpoint of the mere legal interests of an isolated individual or the occasional legal interest of the community as a whole.

The committee probably had in mind, when it wrote its report, the actual extent and manner in which vital statistics are now used as indexes to the state of the public health and as guides to sanitary effort, rather than the extent to which they are susceptible of such use and the extent to which they should be so used.

Doctor Woodward believes that the birth rate is of interest chiefly from a sociological standpoint, but that death rates, general and special, and morbidity rates, must be relied upon to show where sanitary efforts are needed, and to demonstrate the results of sanitary work already under way; therefore it is with these reports that the practical side of the sanitation is chiefly concerned. Nowhere do the sanitary possibilities in vital statistics, and the difficulties in the way of their realization, become more apparent than in the study of the general death rate. The popularly accepted index to the healthfulness of the community depends, according to the same authority, upon four primary factors: First, an arbitrarily fixed unit of space; second, an arbitrarily fixed unit of time; third, the number of people; and, fourth, the number of deaths. The secondary factors are, however, unfortunately almost innumerable. The number of deaths depends not merely upon the sanitary condition of the locality, or, speaking more broadly, upon its salubrity, but also upon the resistance of the individuals of whom the community is composed. When it is sought to analyze the factors that go to make up salubrity, it is found that they include the most varied conditions, as, for instance, the character and extent of changes of temperature, of the prevailing winds and humidity; the character of the soil; the character and location of dwellings; kinds of occupations; quality and availability of the food and water supply; the removal and disposal of wastes, and probably numerous other factors, all going to make up the entity called "environment." The variations in the character of the population which determine the resisting qualities are equally numerous—age composition, racial lineage, vital resistance as affected by special causes, distribution by sex, intelligence, financial status, heredity, and other factors of this class.

In order, then, that the highest value may be obtained from the vital statistics that are being more and more extensively compiled every day, great attention must be paid to the scientific analysis of such statistics, not as mere figures only but as representing scientific facts, so that they may actually afford a proper basis for rational sanitary measures rather than serve merely to flatter the community into a condition of self-complacency when the rates go down, and to frighten it into a state of panic when they go up.

If medical men would learn the value of such statistics when properly arranged and classified, and exercise a little more care in assembling the data, the problem of the statistician would be much easier. There is no place in which correct spelling and correct information are of more importance from a legal standpoint than on birth and death certificates; and it may be added that nowhere are the rules of accuracy treated with more indifference. The birth certificate should be the first official record of a person's name, the death certificate the last. "John Smith" in the former is not sufficiently identified by the name of "J. Smith" in the latter. Let physicians fully realize these truths and the greater part of the statistician's troubles will be over.

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SANITARY STATISTICS IN MANILA.

The sanitary statistics of the city of Manila are relatively correct, though considerable trouble has been met with in obtaining birth certificates. Three years ago not over 40 per cent of the births were reported to the bureau of health; at present fully 75 per cent are recorded. The difference is accounted for solely on the ground of persistent effort. Sanitary inspectors make inquiries as to new births at every house they visit, and baptismal data are obtained from the various churches, and every other available source of information is exhausted.

PROVINCIAL SANITARY REPORTS AND STATISTICS.

Complete forms for provincial and municipal sanitary reports have been in use for several years, but owing to the character of the transportation facilities and unfamiliarity of most of the presidents of municipal boards of health with the essential facts of sanitary statistics, the data collected have been incomplete and unsatisfactory; yet the elaborate system of reports has been continued more for their educational value than for any other reason. Such statistics as are received are classified and tabulated in the office of the statistical division of this bureau, but as yet they have not been employed very extensively in the published reports, for the reason that their correctness is not properly attested.

A few of the provinces publish special bulletins of their own, in addition to rendering the prescribed forms.

Experience has taught that the only successful way to obtain vital statistics from remote municipalities is the exercise of patient but persistent prodding, and that the average president of a municipal board of health thus stimulated will furnish as complete statistics upon a considerable number of things as he will upon a few.

INCREASE IN POPULATION.

The population of the islands in times of war and pestilence was stationary, but for the past three or four years reports from all over the archipelago show that the number of people is increasing at a satisfactory ratio, notwithstanding the high prevailing death rate among infants. Except in Manila and in Tarlac Province there has been no census since 1903. The bureau of health census, taken last year, showed that between 1903 and the close of 1906 there had been a steady increase in the population of Manila in all nationalities except Chinese and Eurasians, as follows: Americans, 8 per cent; Filipinos, 2 per cent; Spaniards, 14 per cent; and other nationalities, save the two exceptions mentioned, 27 per cent. The next census return will undoubtedly show a large increase in most of the provinces and municipalities.

In some provinces the number of persons recently vaccinated by the bureau of health is greater than the number reported by the official census of 1903. In the province of Tarlac, with a census population of 113,513, the number of vaccinations was 155,679; in the province of Cebu, with a census population of 653,729, the number of vaccinations was 744,314, and in the province of Sorsogon, with a census population of 120,454, the number of vaccinations was 128,366. In these three provinces alone there are at least 120,665 more inhabitants than in 1903.

HEALTH RESORTS.

There are at least three things necessary for health resorts—pure air, pure water, and an agreeable climate. Several places in the Philippine Islands fully meet these conditions, but the only ones which are to any extent utilized by the public are Baguio, Los Baños, and Sibul Springs. The former is especially noted for its climate, and the latter two for their medicinal water.

Baguio is situated in the mountain region of Benguet Province. Los Baños is on Laguna de Bay, only a few hours' run from Manila by steamer. Sibul Springs is in Bulacan Province and was formerly a Spanish resort. It has been taken over by the government and the local conditions so improved as to obviate the contamination of the water by surface drainage.

To the popular mind medicinal springs are endowed with an unvarying and unfailing degree of purity, but they share with other waters the likelihood of becoming polluted either before or after the issuance of the water from the ground.

Sibul Springs, once the Mecca of large numbers of the Philippine population, is again attracting more attention. Formerly Sibul was rather difficult of

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access, but now it can be conveniently reached by railway to San Miguel de Mayumo, and then by carromata over an excellent new road 12 kilometers in length, which was constructed by the government during the year.

The bureau of public works has filled in and improved the course of the stream which flows through Sibul and which has been largely responsible for the many mosquitoes previously encountered there. The spring itself has been inclosed with a reenforced concrete wall and the baths have been reconstructed. Former analyses showed the presence of amœbæ; these were, no doubt, caused by the vegetable matter, filth, and mud which was washed into the spring by the surface water. Examinations made since the stoppage of the sources of pollution show the water to be free from amœbæ or other animal forms, and chemically to be satisfactory, as shown by the following report:

Chemical analysis made by the Bureau of Science.

	Parts per 1,000,000.
Reaction	Alkaline.
Total solids	487.6
(a) Fixed	458.0
(b) Volatile	29.6
Free or saline ammonia	.0087
Organic or albuminoid ammonia	.0337
Oxygen consumed	.5
Chlorine	31.3
Nitrogen as nitrates	None.

Remarks: Satisfactory.

The Sibul Springs water is undoubtedly a valuable one, being very beneficial in diseases of the intestinal tract, especially those of a chronic catarrhal nature, and will probably take the place of many foreign waters now sold in the local market. The baths, owing to the gases which the water contains, are most refreshing and apparently of considerable value as an aid to the cure of the diseases for which the water is prescribed.

A report of an analysis made by a chemist prior to American occupation was published in the "Libertas" on February 26, 1907, a copy of which is on file in the bureau.

At the last session of the Philippine Legislature ₱10,000 were appropriated for the purpose of still further improving the site and surroundings, with the view of making this water available and safe for a greater number of people than before.

In view of the improvements, and of the laboratory report on the water, the Manila drug stores have taken the matter up, and Sibul Springs water may be obtained at a reasonable price.

The military has established a sanitarium at Los Baños, where soldiers and military employees suffering from syphilis and rheumatism are sent for treatment; convalescents are also sent to this resort. Besides the military hospital, a private sanitarium is conducted by a reputable physician.

Baguio is the summer capital and the principal health and climatic resort of the archipelago. The lower temperature has a remarkably exhilarating and refreshing effect upon persons who have been residing in the low lands. For the great majority of the cases of amœbic dysentery it is almost a specific. Malarial fever is unknown. The climate is well adapted to convalescents from typhoid and malarial fever and other wasting diseases.

The military is constantly constructing additional buildings and increasing the capacity of its camp. A large modern hospital building was completed during the year. An appropriation has been requested from Congress for the construction of a brigade post in order that the necessity for returning troops to the United States every two years may be obviated by giving them the benefit of the Benguet climate. Mention has been made of this on page 68.

The civil government has also completed a modern hospital building at Baguio during the year. It is believed that confinement and many cases requiring surgical assistance, from which convalescence is necessarily prolonged, will avail themselves of the cooler climate.

The stay of a number of visitors at Baguio for a period of several weeks during the past few years at the beginning of the rainy season has been made uncomfortable by attacks, the symptoms of which resembled the "hill diarrhea" of other countries. No permanent bad effects have been noted, and it is believed that the symptoms are due to drinking water which has not been prop-

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erly boiled and filtered. At the beginning of the rainy season large quantities of mica or some other mineral irritants are probably washed into the springs or other sources of water supply, and then ingested, which produces diarrheas. Distilled water will be available next season, and it is believed that all who use this exclusively will not be affected.

WATER SUPPLY.

NEW WATER SUPPLY OF MANILA.

With the completion of the new water system for the city of Manila, the cost of which is placed at approximately ₱4,000,000, one of the largest sanitary reforms undertaken by the American Government will have been concluded. It is confidently hoped that an improvement in the public health will be immediately noticeable, and that the great scourge of modern civilization, typhoid fever, will now not gain a foothold in the islands.

The new water system will probably be completed long before this report is published. When the water becomes available, the health authorities will be spared many anxious moments, as the danger from pollution will be practically eliminated. It will not be necessary to send soldiers to protect the river, as has been done in the past, for the reason that the intake is located beyond the line of human habitation and the control of the intervening territory secured.

Too great emphasis, however, can not be laid upon the fact that all the water examined from rivers, streams, or shallow wells in the Philippine Islands has been found to contain amœbæ. It is not known whether they are pathogenic or not, and it is therefore urgently recommended that all drinking water be sterilized before use. It is, of course, too much to hope that all the residents will follow this advice at once, but it is believed that Americans, Europeans, and the better class of Filipinos will continue to use distilled water.

The military government has its own distilling plants, while the civil employees purchase water from the insular cold storage and ice plant.

SANITARY ANALYSES OF WATER.

Many samples of water have been examined bacteriologically and chemically by the bureau of science at the request of this office. This feature of the work has been extended to many Provinces, whereas it was formerly largely restricted to Manila. In the case of public houses serving infected water, a reasonable time is allowed to make an improvement in the condition, and, if not done, the houses are closed until they comply with the requirements of the law.

DISTILLED WATER.

The division of cold storage of the bureau of supply furnishes all employees of the civil government with distilled water at a nominal charge.

The original source of the water is an artesian well 700 feet deep. The water is first delivered to an overhead tank, from which it passes over hot plates, where it is raised to a temperature of 180° F.; thence it goes to the boilers, where it becomes steam, and is used for the generation of power. The exhaust steam passes from the cylinders to piping, which conducts it first to a sand filter, then to a charcoal filter, and finally to the condenser. So much of the outflow of water from the condenser as is not used in the manufacture of ice is again filtered through fine sand before running into the delivery pipes.

An analysis of this distilled water was made by the bureau of science on February 20, 1908, with the following result:

	Parts per 1,000,000.
Total residue by evaporation	2.8
Volatile matter	1.2
Fixed residue	1.6
Nitrites	None
Chlorine	None
Oxygen consumed	None

BOTTLED DISTILLED WATER.

To meet the demand of a large number of patrons desirous of having bottled distilled water delivered at thier residences, a private firm and the division of cold storage now deliver water in boxes of 6 bottles.

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The size of the bottles makes it convenient to store them in an ice chest, and water can be served directly from them, thus doing away with all danger of contamination.

Much of the value of distilled water is frequently lost by its coming in contact with unsterilized vessels after leaving the delivery wagon. Experience has shown that it is almost impossible to instill into the mind of the average muchacho a proper regard of sanitary precautions in the matter of drinking water. Typhoid, dysentery, and diarrheas are frequently the penalty of carelessness in this respect.

The water is delivered within the city limits in tank wagons or in cases of 6 two-quart glass bottles. Both the tanks and the bottles are carefully sterilized before being filled with water. The demand for distilled water delivered in bottles has far exceeded all anticipation.

An important sanitary reform has been inaugurated in this new departure which merits the gratitude of the public and the sincere thanks of this bureau.

BIOLOGICAL STUDY OF THE WATER SUPPLY OF THE PHILIPPINE ISLANDS—NEW PATHOGENIC ORGANISM.

The paper of the above title was read at the last annual meeting of the Philippine Islands Medical Association by Dr. Ralph T. Edwards, of the biological laboratory of the bureau of science. He stated that practically all of the natural sources of water supply in the Philippines contain amœbæ, and that the only water which had been found not to contain amœbæ was that taken from artesian wells. Experiments which he conducted with different filters led him to the conclusion that the only safe water to drink was that which had either been distilled or boiled. His examination of the aerated bottled waters sold in the local market showed the same to be fairly satisfactory.

In an examination made of a specimen of water taken from a well in Calle Cabildo, Intramuros, Manila, a pathogenic bacillus was detected which he named the bacillus Cabildonus. This organism was found to be of extreme pathogenicity in small animals.

ARTESIAN WELLS.

As stated elsewhere, the legislature of the Philippines has indorsed the artesian-well movement by appropriating the sum of ₱150,000 for the extension of the system. The success attained by this measure of public sanitation, in reducing the death rate 50 per cent in many instances in those municipalities in which wells had been sunk, has already taken the project out of the experimental stage and placed it on a firm foundation, supported by the growing, favorable public sentiment, which will be greatly enhanced by the recent action of the legislature.

The bureau of public works is now busily engaged in sinking the wells for which appropriation has been made.

MILK SUPPLY.

THE GOTA DE LECHE SOCIETY.

On December 1, 1906, the Gota de Leche Society was formally organized and incorporated later under the name of La Protección de la Infancia. It is conducted principally by Filipino ladies, aided by a number of American ladies. The organization, as its incorporated name implies, is a society for the protection and care of infants. It is organized along the same lines as similar societies in European cities.

According to carefully prepared estimates, the mortality among maternal-nursed infants under 2 years of age in the city of Manila is less than one-tenth of the mortality in bottle-fed children. What is true of Manila will probably hold good throughout the provinces, but no statistics are available to safeguard the assertion.

Dr. David J. Doherty, of the city of Chicago, was one of the prime movers in the organization of the Manila society.

DAIRIES AND DAIRY PRODUCTS.

The sanitary code makes it unlawful to bring into the city of Manila or sell, or offer for sale, any milk that is not fresh and wholesome or that has been watered, adulterated, reduced, or changed in any respect, by the addition of water or any other substance, or by the removal of cream, except that milk

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from which any part of the cream has been removed may be offered for sale or sold if the fact is publicly advertised on the cart or in the place of business of the vendor, or made known to the purchaser at the time of sale. Adulterated milk is defined as (a) milk containing less than 12 per cent of milk solids, including fats; (b) milk containing more than 88 per cent of water or fluids; (c) milk containing less than 3 per cent of fats; (d) milk drawn from animals within fifteen days before or five days after parturition; (e) milk drawn from animals fed on any substance in a state of fermentation or putrefaction or any unwholesome food; (f) milk drawn from cows in a diseased or unhealthy condition, or from cows kept in a crowded or unsuitable place; (g) milk from which any part of the cream has been removed; (h) milk to which has been added water or any foreign substance whatever.

Dairymen or other persons having in their possession milch or dairy animals, the milk of which is to be sold or distributed in the city of Manila, are required to have such animals, prior to the sale of the milk, subjected to the tuberculin test in order to determine the presence of tuberculosis.

Before the bureau of health established a system of strict surveillance over the sale of milk, the practice of adulteration by water was quite prevalent. The principal adulterations were, in the case of cow's milk, the addition of water and the abstraction of cream. The former greatly diminished the nutritive value, and as the water was frequently from an unclean source, it was the means of introducing disease organisms. The abstraction of the fats robbed the milk of one of its most valuable constituents.

The addition of coloring matter for the purpose of concealing the evidences of adulteration or the abstraction of cream had not become a general practice, but no doubt in the course of time it would have become popular. Rice starch was sometimes used to thicken a diluted milk, and to the uninitiated it was a measure of the "fuerza" (strength) of the product.

In temperate zones it is generally regarded that a milk not more than twenty-four hours old may be considered a fresh article, but in this climate it would not be permissible to allow even half that many hours, unless the milk had been kept at a very low artificial temperature from the time it was drawn.

The milk supply in the Philippines is so limited that there is very little demand for pasteurization and sterilization as permanent preservative methods, the only process resorted to being that of reduction of temperature, as the food and drugs act prohibits the use of chemical preservatives.

Milk was formerly a more important factor in the spread of disease than it is now since the dairies and milk vendors are so closely watched. There are stringent laws against the use of milk from animals suffering with rinderpest, foot and mouth disease, anthrax, surra, actinomycosis, tuberculosis, or other diseases of an infectious nature. There is no doubt that the milk supply of the Philippine Islands is sometimes responsible for the introduction of the tubercle bacilli into the human system. This statement is made without reference to the merits of the controversy as to the identity of bovine and human tuberculosis. The fact alone that warm milk is such an ideal medium for the transmission of bacteria is sufficient to justify the hypothesis, if there were no reasons to suspect the direct transmission of the disease from the infected animal to the user of the milk.

In the Philippines and other tropical countries milk has a better opportunity to become contaminated than in cooler climates, especially as containers and vessels of all kinds are usually washed in cold, unsterilized water. Then there are the regular channels of infection; that is, from the hands, person, and clothing of the milkers, vendors, and others by whom it is handled.

It is prescribed by administrative and ordinance regulations that no person sick with or convalescent from infectious diseases or having to do with the care of the sick or with the disposal of their excreta or with the washing of their clothes shall be allowed to handle milk intended for the use of others, but it is not always practicable to enforce this regulation, except among such employees as drivers and others whose duties bring them within the realm of constant inspection.

The poorer classes in the Philippines use the milk of the carabao almost exclusively, while the upper classes use goat's milk and the milk of the cow. Australian dairies may be found in Manila and in the larger cities, but on account of the prevailing high prices the poor people can not afford to purchase this class of milk. Gradually the conditions are improving, but success is dependent on continuous strenuous effort and watchfulness. The same methods and measures enumerated in last year's report are still employed. Samples are collected

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from each district daily and submitted for analysis, and prosecutions are instituted in all cases of flagrant willful violation of the law.

Owing to the scarcity of milch animals, the use of condensed milk by the poor and imported sterilized milk by the better classes is quite prevalent. Sterilized milk in hermetically sealed cans is imported from Switzerland and Italy, and has proved to be a very satisfactory substitute for the fresh article.

Butter and cheese are practically all imported from foreign countries.

PURE FOOD AND DRUGS.

ADMINISTRATION OF THE FOOD AND DRUGS ACT.

Judging from the character of the foods which were rejected at the time this law went into effect, it appears probable that much of the illness that has heretofore been ascribed to the tropical climate was likely not due so much to the effects of the climate as to the added chemicals which the food products contained which are prepared by foreign manufacturers for the use of residents of tropical countries.

The administration of the food and drugs act has been conducted with gradually increasing adherence to the letter and spirit of the law. There were examined during the year a total of 696 samples of food and drug products. Of this number, 89 were rejected and 172 misbranded, which were released upon being properly relabeled. Of the total number of samples examined, 561 were products which had heretofore not come under laboratory observation. Of this number 77 were rejected and 160 misbranded. Many of the importations were either denied admittance or were only admitted after being relabeled, because they were of the same brand as shipments which had been denied admission as the results of other analyses.

There have been very few willful evasions of the law, and the merchants of the Philippines have shown a most commendable spirit in their efforts to comply with the requirements.

Some idea of the extent of the sophistication and fraud practiced before the passage of the food and drugs act may be gained by a brief consideration of a few of the commoner evils that prevailed. An article in Colorado Medicine, by Dr. Edward C. Hill, recently published, so closely coincides with the facts in the Philippines, and fits the case so well, that it is liberally quoted from in making reference to former conditions.

Most reprehensive of the practices were in the nature of sophistication; that is, the addition or substitution of comparatively harmless substances, which were injurious, however, from a negative standpoint, through deprivation of the displaced normal ingredients, and because of the impairment of the natural flavor upon which good appetite and digestion largely depended.

Water was sometimes added to lard up to 24 per cent, with the aid of lime or carbonate of sodium or potassium. "Renovated process" or "hash" butter was prepared by heating and treating with sodium carbonate. Rennet, or a mixture of pepsin and sodium sulphate, or gelatin and glucose, were added to butter (stretched butter) to make it hold more water (up to 50 per cent) and so increase its weight. "Refined" or "compound" lard was a mixture of beef fat and cotton-seed oil. Lard was also adulterated with starch, lime, alum, and salt. Colored oleomargarine was sold for butter. This product, if pure, is wholesome and nutritious, but is not so readily digested as butter; hence is contra indicated for invalids. "Butterine" had lard and oleo oil added to the milk before churning.

Skimmed milk cheeses were occasionally "filled" with lard, cotton-seed, and other oils, but such sophisticated products lacked the natural aroma and flavor. Olive oil was extensively adulterated, especially with cotton-seed oil (sometimes with peanut or sesame). There is no objection to this from the hygienic or dietetic point of view, but it is nevertheless a fraud. Almond oil was often adulterated with the poisonous oils of peach and apricot kernels. Menhaden, whale, and seal oils were used to adulterate cod-liver oil.

Starch was a very common "filling" agent (increasing weight and capacity for water) in potted beef and poultry, patés, sausages (preventing shrinkage when fried), yeast, baking powders (up to 50 per cent—should not have exceeded 20 per cent), ground mustard, and canned corn (rendering liquid more creamy). "Lemon jelly" was made from starch and tartaric acid. Potato starch was often mixed with sago. Extract of yeast was sometimes found

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in meat extracts. Wheat flour was occasionally adulterated with corn meal and other cereals. "Buckwheat" flour used to be a mixture of rye, maize, wheat, etc.

Cane sugar was sometimes added to honey and to Indian corn, which was lacking in sweetness. Much more objectionable was the use of saccharin in corn and tomatoes. Jellies and jams were often nothing more than glucose, gelatin, and starch paste flavored with essential oils and colored with analin dyes. Apple stock (pulp, skins, seeds, cores), pumpkins, turnips, and molasses were the common bases for all kinds of jelly sold in stores. Glucose is also a leading component of imitation honey, maple sirup, and fruit butters. Glucose is only half as sweet as cane sugar, but it is not injurious to health, except as it may contain sulphuric and sulphurous acids, used in its manufacture and not completely removed. Cheap confectionery was composed largely of glucose and starch colored with anilin dyes. The use of paraffin in butter scotch and chocolates is dangerous, because of its insolubility.

Foreign mineral contamination, accidental or surreptitious, is usually negligible in quantity. Actual dirt is sometimes left purposely in truffles. One seldom encounters of late ground gypsum, talc, terra alba, silicates, marble, or chalk in confectionery or flour; iron or brass filings, soapstone, gypsum, or sand in tea; lead salts and iron oxid in cocoa, or sand in sugar. Arsenic (from pyrites used in making sulphuric acid, for manufacturing glucose) is an occasional dangerous, even fatal contaminant of beer and soda water. Lead compounds have been added to wines to sweeten the product. Tin, lead, and zinc, from can solder, may accidentally contaminate canned meats, fish, and fruits—danger enough without adding to it by supplying these poisons. Varnishing the inside of the cans prevents electrolytic solution of the metals. A trace of zinc is sometimes found in dried apples, from the use of galvanized iron racks. Molasses manufactured in the old way should hardly be considered an edible substance, since it contains tin chlorid, zinc salts, and sulphurous acid used in refining the sugar of which it is the residue. Solutions containing copper, lead, mercury, or arsenic have been applied to the outside of cheeses to preserve them from insects. The "bloom" of lime on nutmegs answers the same purpose.

According to Doctor Wiley, the basic sulphate of aluminum is the acid ingredient in the great majority of present-day baking powders. He says that if the proportion of baking soda is properly balanced, the powder leaves on reaction aluminum hydrate (not ordinary alum), and the sulphates of sodium, potassium, or ammonium (ammonium carbonate sometimes used as alkaline agent). Alum baking powders have no marked effect on the health, except that it has a tendency to produce constipation, but yeast bread is probably more hygienic than that prepared with these powders. Alum was frequently added to baker's bread to render it hygroscopic and whiter and to prevent souring. It was also found in pickles and ground ginger.

Ground spices were commonly sophisticated with fruit stones, hulls and shells, flour, starches, cereals, ground shipbread, charcoal, sawdust, clay, gypsum, and cheaper spices. Whole ginger was sometimes "whitewashed" with chalk or plaster of Paris, or bleached with chlorinated lime or sulphurous acid. Ginger, previously exhausted by the ginger-beer manufacturers, was often sold as genuine. Whole black mustard was frequently mixed with rape seed. Pepper used to contain a large proportion of sand and other mineral matter. Unground pepper berries were sometimes weighted by saturating with brine, or whitened by bleaching or facing with chalk. Cayenne pepper was, at times, weighted with red lead.

One of the most dangerous and reprehensible forms of adulteration was the use of wood alcohol in cheap flavoring extracts. "Lemon extract" was sometimes made from the oil of grass. "Vanilla extract" was frequently prepared from the tonka bean.

Cocoa and chocolate were adulterated with vegetable oils, mutton tallow, clay, brick dust, and Venetian red. So-called soluble cocoa was prepared with sugars and starches, particularly arrowroot. Ground coffee was commonly sophisticated with the darker, more bitter chicory, which itself might have been adulterated with beets, mangel wurzel, dandelions, oak bark, sawdust, and colored earths. Spent coffee beans were now and then roasted with sugar and sold as genuine. Package substitute coffees consisted of roasted ground peas and cereals.

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Many were the deceptive names of food preparations. "Full cream" cheese simply meant cheese made from the whole milk. "Egg powders" for making cakes consisted of colored casein or starches. "Raspberry sauce" was frequently made almost wholly from gelatin. Gluten flour always contained starch, the standard not over 48 per cent.

A frequent form of simple fraud was misnaming a natural product as to its geographic origin. For example, the Maine herring sold as the European sardine. Horseflesh and other meats of uncertain origin were occasionally utilized in sausages.

A very frequent kind of adulteration was the addition of coloring matters and other substances to "improve" the appearance or taste. Such "improvement" is deceptive, and panders to a semibarbaric taste for high colors and flavors. The natural colors in cochineal, burnt sugar, annatto, saffron, and chlorophyl are considered harmless, but only a few anilin dyes have escaped condemnation by experts. There have been several deaths in young children from eating the concentrated colors. These dyes may contain arsenic or mercury, used as oxidizers in their manufacture. The coal-tar dyes are cheap and were used very extensively in confectionery, ice cream, jams, jellies, wines, sausages, mince meat, pie fillers, and maraschino cherries. Practically all butter was artificially colored, sometimes with marigold, turmeric, saffron, or annatto, often with coal-tar dyes, especially methyl orange and carotin. If it is really desirable for butter to have a rich yellow tinge, this can be accomplished in a natural way by feeding the cows carrots, rutabagas, yellow maize, and clover hay. Cheese was colored with carrot juice, saffron, annatto, turmeric, and yellow azo dyes. Naphtha yellow was used in cakes. Curcuma was commonly added as a coloring agent to ground ginger, mustard, and rhubarb. Gelatin and caramel were sometimes put into milk or cream to make them look richer. "Viscogen," a sirup of lime (6½ per cent), was used to give body to creams.

Mineral coloring matters are much more objectionable than vegetable. The oxides and salts of arsenic, copper, chromium, and lead are especially injurious, and have been found in confectionery, flour, cakes, and cheese. Copper sulphate and nickel salts give an intense green color to cucumber pickles and canned peas which are imported into this country. Stannous chlorid precipitates the coloring matters from sirups and gives a bright yellow appearance. Tea leaves were faced with lead salts or Prussian blue.

Bleaching agents in food are of hygienic importance. Sulphurous acid (the fumes of burning sulphur) is used with dried fruits, starches, wines, and finished sugars (may contain salts of tin or ultramarine blue). Bisulphite of sodium or potassium was formerly used with canned corn. Inferior flour was bleached by electrically generated ozone and oxids of nitrogen. Saponium was added to soda-water sirups to give a good foam; this often caused gastritis.

"Soaked" or "floated" oysters looked plump, but readily lost flavor and frequently became infected from the water or ice used.

Imitation maple sirup was made of extract of hickory bark (maplein) with glucose or cane sirup. Synthetic imitation fruit flavors and sirups were commonly utilized for cakes and ices. Sauces were sometimes rendered piquant with sulphuric acid. Alcoholics and poisonous flavors (oil of mirbane), though injurious, were made use of in candies.

Alcoholic liquors used to be commonly adulterated; beer with quassia, gentian, columbo, chiretta, chamomile, kino, cream of tartar, copperas, orris root, picric acid, strychnine, picrotoxin, wormwood, capsicum, cinnamon, ginger, and other spices. Sodium bicarbonate was used in beer to correct acidity and increase the bead. Glycerine sweetens the beverage and gives it body. Poisonous fusel oil is present in young raw whisky and in imitations.

Cheap wines were made from raisins, dried apples, raspberries, and gooseberries. Champagne has been made from gooseberries and water. Gin was often concocted from a mixture of water, sugar, cinnamon, alum, capsicum, cream of tartar, and a little alcohol. Prune juice was frequently added to factitious and fictitious rum. Alum heightens the color of wines; added acids imitate the reaction of mellow age. Cheap wines were "plastered" with calcium sulphate, which preserves the product and improves the color by forming an acid sulphate of potassium and separating out tartrate of potassium.

The question of the use of chemical preservatives in food has long been a storm center of controversy between sanitarians and manufacturers. Dr.

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H. W. Wiley, Chief of the Bureau of Chemistry, Department of Agriculture, the foremost authority upon this subject, declares that nearly all food preservatives (including borax, boric acid, sodium sulphite, and benzoic acid), used continually, have a deleterious effect upon digestion, and are irritating to the kidneys. He holds that sterilization suffices for canned meat, and that grain spirit and the simple condiment substances (salt, sugar, spices, vinegar, wood smoke) in moderate quantities are the only unobjectionable added preservatives. One important objection to food preservatives is the stale condition which they hide, though not preventing the formation of autolytic enzymic products detrimental to health.

Borax and boric acid have been extensively used in milk, cream, butter, meats, beef juice, broken eggs (2 to 4 pounds of borax per 100), and oysters. Borax and sodium carbonate are sometimes added to tea to improve the color of the infusion. Borax and boric acid (not over 1½ per cent) have been recommended by Vaughan as an application to the surface of hams and bacon, to prevent the slimy decomposition due to anerobic bacteria. "Preserving salts" contain about 30 per cent borax and 10 per cent common salt. A popular "preservaline" contained of borax about 70 parts and of salt about 30 parts. "Ozone antiseptic" is composed of 2 parts boric acid and 3 parts borax.

Sodium sulphite and saltpeter were added to meats to preserve the red tint of the fresh article. "Meat preservative" contains 65 per cent sodium sulphite and 34 per cent sodium sulphate, colored with anilin dyes. A recent federal inspection decision permits the presence of 350 milligrams of sulphur dioxide (not over 70 milligrams free) per liter in wines and molasses. Glycerin was used to preserve beef juice and bone marrow. In large amounts it may have a hemolytic action, as shown by the urine. Benzoic acid or sodium benzoate was frequently added to meats, fruit juices, catsups, jams, jellies, and fruit butter. In viands like catsup, necessarily exposed to the air some time after opening, sodium benzoate is generally considered still permissible in the proportion not to exceed one part in 1,000. Salicylic acid, hitherto used in fruit juices, jams, jellies, milk, wines, beer, and catsups, is now rightly prohibited.

A most reprehensible practice was the addition of formaldehyde ("freezine, icelene, preservaline, milk sweet") to milk, wines, broken eggs, and shucked oysters.

Doctor Wiley reported to the Committee on Agriculture of the House of Representatives of the United States Congress the result of the experiments conducted by the bureau to determine the poisonous effects on the human system of such drugs as borax, benzoic acid, benzoate of soda, sulphate of copper, sulphur dioxide, formaldehyde, and salicylic acid, when contained in foodstuffs. He said that the expulsion of those and kindred drugs from the body is performed almost entirely by the kidneys, and that he is satisfied that the term of American life would be lengthened if the use of such drugs in foods were wholly discontinued. He said he is convinced that kidney disease, so prevalent among Americans, is partly the result of constant introduction into the system of such preservative substances as benzoate of soda, carried in the food. Discussing sulphur dioxide and its injurious effects, Doctor Wiley told the committee of a discovery just made by him that salt solution is a perfect substitute for sulphur in the whitening and drying of fruits. In the samples exhibited, dried experimentally by the bureau, the sulphured fruits were not so white nor so tender as the salt cured.

The consumer, as well as the manufacturer, is entitled to a "square deal." Deleterious substances should not be permitted under any consideration, and also adulterations and sophistications not manifestly injurious should be plainly labeled, so that the public may know what they are getting. No other law enacted by Congress has had such a universally beneficial effect upon the people at large. The Philippine law is nearly an exact repetition of the law of the United States, and has almost revolutionized the food situation in these islands.

AERATED WATERS.

It is most satisfactory to report that samples of aerated waters, which were collected from practically every factory of this kind in Manila, showed that the use of sterilized water for this purpose has now become general, and for that reason it was unnecessary to recommend any prosecutions on this account.

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THE PATENT AND PROPRIETARY MEDICINE EVIL.

The administration of the food and drugs act has included close supervision of the importation, manufacture, and sale of patent and proprietary medicines. Some flagrant frauds have been exposed, and the people are beginning to realize that some of the medicines widely advertised as harmless contain dangerous substances, while others claiming powerful action consist of inert and harmless mixtures.

When the truth dawns on the public that in patent medicines it is all in the advertising and the principal good accomplished is the stimulus to the circulation of money by the commercial side of this evil, the sale of such so-called remedies will grow less and less.

FREE DISPENSARY SERVICE.

The bureau of health has maintained three dispensaries in the city of Manila—one at the central office, one at the San Lazaro Hospital, and one at the Civil Hospital; besides, there are 5 smaller dispensaries, corresponding to the number of health stations. In each of these stations surgical and medical clinics are held daily by the municipal physicians and medical inspectors.

The bureau has supplied the St. Luke, the St. Paul, the Methodist, and the Philippine Medical School dispensaries with certain quantities of drugs to be used in their respective clinics. In the central dispensary alone 26,750 prescriptions were filled.

The masses of the Filipino people are gradually deserting their "mediquillos," whose diagnoses and methods of treatment are relics of barbarism, and are turning to the regular physicians. It may just as well be stated here as elsewhere that the Filipino physicians, greatly to their credit, are very little tainted with the false doctrines and delusions of the irregulars, and that they have been largely instrumental in standardizing and elevating the methods of medical practice in this portion of the Far East.

PUBLIC MARKETS OF MANILA.

The long-continued controversy between the bureau of internal revenue and the department of sanitation and transportation of the city of Manila with regard to the extent of authority over the public markets of Manila has now been placed on a definite and satisfactory basis. The work of renovating and regulating the markets of the city has been undertaken by the department of sanitation and transportation, on the completion of which the administration of all the markets will be turned over to this department by the bureau of internal revenue. At the present writing the markets of Quinta and Sampaloc have been completed and are under the control of the department of sanitation and transportation. Work on the Divisoria Market is under way and will probably be completed in the course of a few weeks, at which time the department will take control.

The collection of the market fees, of course, still remains with the bureau of internal revenue.

The bureau of health has been particularly pleased with the system of administration adopted, and with the promptness with which the chief of the department of sanitation and transportation, Mr. J. C. Mehan, has carried out the suggestions of this office with regard to certain features of public sanitation.

The improved conditions in no wise reflect upon the former management, but go to prove that the highest state of efficiency can not be obtained when there is embarrassing intermingling of authority.

PROVINCIAL MARKETS.

In the report of this bureau for last year, under the subject of provincial markets, attention was called to improvements that had been brought about in the sanitation of this class of public institutions. Under the new system the sanitary conditions of the market must be reported on by the local sanitary officers. These reports go to the district health officer, who sees that the cause for complaint, if any, is removed.

Market venders are required to keep their perishable and easily contaminated foodstuffs covered so as to avoid infection from flies or roaches.

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The little points of market sanitation are continually being urged lest the people forget and conditions drift back to their former status.

The construction of modern permanent market buildings has been undertaken in many of the provinces, and they mark a distinct step in advance in permanent sanitary improvements. Among the municipalities that have constructed new modern markets should be mentioned Pasig, Malabon, and Baguio.

The Moro government has established in Zamboanga district more than half a hundred Moro exchanges or markets. These institutions are kept in a cleanly, attractive condition, and serve as a clearing house for the industries of the Moro people. There has been great improvement in the habits and customs of the people with respect to market sanitation in the majority of municipalities.

PUBLIC CLOSETS.

The frequent recommendations of the bureau of health that the number of public closets be increased have finally received recognition in that the municipal board has recommended the setting aside of sufficient funds to install at least 25 of these public conveniences in different sections of the city.

DISPOSAL OF NIGHT SOIL.

The question of the proper disposal of night soil in the city of Manila will be settled when the new sewer system, now well along in the course of construction, is completed. The filthy practice of the Chinese market gardeners in sprinkling a solution of night soil over growing vegetables led to the passage of Act No. 1226, which absolutely prohibits any market gardener, farmer, or other person from making use of human excreta as a fertilizer for crops of any kind. This act was passed as a preventive measure against cholera, and has been productive of great good; nevertheless, the restricted utilization of night soil as a fertilizer for nonedible plants is not objectionable, and could be rendered profitable and harmless by proper treatment, as is evidenced by the fact that the city of Hongkong realizes ₱75,000 a year selling this material for fertilizing purposes, while Tokyo adds annually ₱3,000,000 to its treasury from the same source. Night soil is rendered innocuous by burying it for several months in deep, well-protected pits, in order that it may be exposed to the action of nitrifying organisms. The level of the top of these pits is at least 6 feet below the level of the ground surface, which makes it possible to cover them over so as to prevent the escape of noxious odors. As soon as the matter has been thoroughly digested by the bacteria, the pits are opened and the resultant mass sold for the fertilization of mulberry trees, on the leaves of which silkworms are fed. Experiments conducted by the bureau of science have demonstrated that silk culture is feasible in the Philippine Islands, and could be made a profitable industry.

Now, inasmuch as practically all the provincial towns are without satisfactory means of night-soil disposal, the burden of the work falling upon wandering pigs, who are more faithful than cleanly in their habits, this office can see no reason why the municipalities, acting under proper instructions, might not conserve this material, convert it into a harmless fertilizer, and utilize it in the fertilization of mulberry trees for feeding the silkworms. The silk industry can and ought to be made one of the chief industries of the Philippine Islands. This office is ready to cooperate with any movement of this kind provided it is safeguarded by proper sanitary precautions.

SUPERVISION OF PILGRIMAGES.

The sanitary supervision of all the pilgrimages and fiestas held throughout the Philippines would be an impossible task with the present force, so the efforts of the bureau in this direction are limited to the larger assemblages which nearly always involve grave danger to the public health. The smaller gatherings necessarily have to be left to local supervision. Notwithstanding all that has been done in this direction, these ancient customs of the country are still important factors in the diffusion of cholera. These occasions bring together thousands of people, men, women, and children, of all ages and conditions of life, who, for the time being, forget everything else save the festive pleasures in which they join with a zeal that knows no danger. Feasting is one of the essential features of such gatherings. Food is brought from cholera-infected

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districts and even from invaded homes, and, with that sincere hospitality so characteristic of the Filipino people, is distributed to all who will partake. Close communion forms no part of the social creed of the country.

Patients in the incubation stage of cholera often freely mingle with the well, and since the means for the disposal of the excreta of so large a number of people are inadequate, it will be readily seen how the disease may be spread by means of these festive gatherings.

On examining a cholera route map a few days after one of the fiestas has taken place, it may often be observed that the lines of infection radiate in all directions like spokes of a hub, corresponding to the homeward routes of the people.

Consideration for the religious sentiment, respect for time-honored customs, and the disinclination to oppose the commercial interests of the numerous small merchants who profit by these occasions, naturally make the local officials timid in exercising such authority as would interfere with the convenience, pleasure, or comfort of their fellow-townsmen or their guests; thus, many things which should be done are passed over.

The pilgrimages to Antipolo on the occasion of the celebration of the feast of "Nuestra Señora de Paz y Buen Viaje," in which vast concourses participated, estimated at 10,000 persons or more per day, have demanded the closest supervision in the past. At such times arrangements were made with the city of Manila for the installation of a temporary pail conservancy system. Sanitary supervision and inspection were also placed in operation under a medical inspector of the bureau. The problem was simplified this year by a general conflagration which destroyed the town just as the fiesta was about to be opened, and very few people celebrated during the last season. Notwithstanding, the grounds became insanitary through the lack of latrine facilities. This condition, however, was corrected after a number of conferences with the local officials.

THE PHILIPPINES CARNIVAL.

The Philippines carnival was held in the city of Manila February 27 to March 3, inclusive. Dr. Percy L. Jones, captain, Medical Corps, U. S. Army, was appointed chief sanitary officer of the carnival. He had been connected with the sanitation of the Jamestown Exposition in the United States, and was especially prepared for his assignment; and to him is due the excellent sanitary condition in which the grounds and buildings were kept. The sanitary code of the city of Manila was used as a basis on which to work, and it was found sufficient to cover all questions that arose. Inspectors from the bureau of health and the city of Manila were detailed to aid in the work. The removal of garbage, night soil, rubbish, and other waste matter was carried out by the department of sanitation and transportation. Public closets were installed, and distilled water alone was used in the preparation of drinks and for general drinking purposes. The sale of foodstuffs which might be easily contaminated was prohibited. An emergency hospital of 6 beds was established on the grounds. In spite of the fact that probably as many as 10,000 people were in the grounds at a time, no case of cholera was contracted there, although the disease was present in the city.

MEDICAL INSPECTION OF PUBLIC SCHOOLS.

The primary object of the medical inspection of school children has for its purpose the prevention and suppression of communicable diseases. No state or government is justified in enacting compulsory school laws to enforce the attendance of children at schools until it gives its official guaranty that every reasonable effort will be made to render such institutes safe places for the care, comfort, and instruction of the pupils. The school life of children is a foundation period, and the forces, mental, moral, and physical, which make for their future weal or woe, for character or moral chaos, for health and happiness or disease and sorrow in the lives of those who are being trained for future responsibilities and duties, should be the object of profound solicitude to those who are charged with the preparation of the youth of the land for citizenship. These forces involve such questions as the influence and aptitude of teachers, the proper location of school buildings with regard to pure air and good drainage, the construction of the buildings themselves, the regulation of window space, the direction of light, and the facilities for orderly exit in case of danger. The question of overcrowding, the use of poor drinking water, the providing of

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clean, attractive lavatories and closets, and the maintenance of the same in a sanitary condition, the proper slant and height of school desks, and the position of the body of the child, are all features of the question which directly and indirectly influence the public health. Many of the most distressing and humiliating diseases incident to human existence can be traced to the school life of the sufferers.

The protection of the pupils against dangerous communicable diseases is a duty of the profoundest importance and belongs both to the domain of the sanitarian and the school authorities. Medical inspectors of public schools can not work in opposition to the convenience and sympathies of the teachers of the community. There must be cooperation and mutual interests. The school is chiefly for educational purposes and the utmost tact and patience are required in the adjustment of the questions which may arise.

Medical inspection of the public schools of Manila was first begun under the auspices of this bureau during the year 1905, but was abandoned on account of the outbreak of an epidemic of cholera which necessitated the presence of the medical inspector in charge of this work elsewhere.

The work was again resumed in 1906 by the employment by the bureau of health and the bureau of education jointly of a lady physician, Dr. Anna D. Peck. After a system had been decided upon and placed in thorough working order, Doctor Peck was transferred to the bureau of education, and the item of medical inspections of public schools made permanent in the expense estimates of that bureau.

According to the official reports of the medical inspector of schools, 22,300 cases were recommended for treatment during the fiscal year. These were taken care of principally at the health stations of this bureau, and also by the University, St. Paul, and Civil hospitals. There were also several dental cases which were cared for at the free dental dispensary of the St. Paul's Hospital.

The statistics as prepared by the medical inspector of schools are published in the appendix to this report.[a]

DEAF MUTES.

The bureau of education has established a school for deaf mutes, in which the pupils are taught to read and write and to converse by means of the deaf and dumb alphabet. The girls learn to sew and cook, and the boys are instructed in the use of tools or in whatever work they like best. In times gone by such pupils were classed as "foolish," and no effort was made to improve their condition. From the health officer's point of view, this feature of the educational system is of the highest importance and ought to be extended to the provinces.

PUBLIC AND PRIVATE CHARITIES.

Not an inconsiderable amount of the energy of the bureau of health is taken up with the administrative work entailed by the appropriation which is made each year for public charity. This fund amounts to about ₱80,000, and provides clothing, lodging, and subsistence for over 400 people, and outside relief to some thousands of others.

The medical officers of the bureau of health have charge of the admission of the patients for which the municipal board has contracts with the San Juan de Dios and the St. Paul's hospitals and the Philippine Medical School, a total of 150 beds being available in addition to the relief mentioned in the preceding paragraph.

The University Hospital, the Mary J. Johnston Memorial Hospital (for women and children), the Chinese Hospital, all private institutions, and the Philippine Civil Hospital, the San Lazaro hospitals (communicable diseases, insane, and drug habits), and the health stations, all government institutions, are working for the upbuilding of the Filipino people. The bureau of health has a contract with the Hospicio de San José for the care of indigent orphans and old people.

This spirit of helpfulness has pervaded the provinces. The mission districts are being supplied with medical missionaries, and every effort is being made to demonstrate the beneficent purposes of the American Government and the grandeur of American citizenship.

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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The extent of the charities of the Government and of the various religious orders and churches is remarkable, especially when it is remembered that with all that has been done, the native has not been deprived in any degree of his self-respect and pride.

MEDICAL EXAMINATION OF IMMIGRANTS.

This branch of the sanitary work is conducted under the provisions of the United States immigration laws, and is performed by the medical officers of the United States Public Health and Marine-Hospital Service. During the year 7,864 aliens were examined, and 51 rejected. The rejections for the most part were on account of trachoma.

The more virulent form of trachoma is scarcely known in the islands, and the exclusion of aliens who are afflicted with it will do much toward preventing this disease, which is responsible for 15 per cent of the blindness in the United States, from gaining a foothold here.

INSULAR QUARANTINE.

Insular maritime quarantine is exercised through the local health and municipal officials throughout the provinces, except at ports of entry, at which places United States quarantine officers are stationed. It has seldom been necessary to impose quarantine through the means of local health officers, because vessels which are affected by it practically always come under observation at a port of entry, where the quarantine officers perform the necessary service.

At the port of Manila, an outgoing quarantine was imposed upon interisland vessels for the greater part of the year, in order to prevent the spread of cholera to other islands by maritime routes. This proved entirely effective. The imposition of general land quarantine has been entirely abandoned because it is ineffectual when not supported by military force, a policy that is deemed inadvisable.

VACCINATION.

The stupendous figures of 1,686,767 persons vaccinated during the year are again conclusive evidence of the large amount of sanitary work being done, and it is believed that in no other country has so large a percentage of the population been vaccinated in the same length of time.

The systematic method of vaccinating has again thoroughly proved its advantage over the methods employed during the first years of the board of health. More than three times as many persons were vaccinated with the same amount of money. It now costs approximately 2½ centavos per capita, while formerly the cost was 7½ centavos or more per capita, and the latter results are fully as good. It will be noted that this improved administration has resulted in the saving of many thousands of dollars to the Government.

The vaccination of so large a number of persons in the Philippines during the last year without a death is striking evidence of the care with which vaccine is prepared and applied. Voight reports that in Germany 1 death occurred in 65,000 vaccinations. Even at this rate, it is better that 1 should die in order that 65,000 might live and avoid disfigurement.

The mortality from smallpox among Filipinos is usually from 5 to 10 per cent, while among Americans and Europeans it is often 75 to 90 per cent. The greatest error with which any person can delude himself, and the one on which false beliefs of personal immunity are based, is that, because he has repeatedly been in the presence of the disease, and has not taken it, he is immune. Others delude themselves with the idea that one successful vaccination, perhaps in infancy, is protective for all time to come. If the tenets of the believers in "new thought" and Christian Science were effective, this class of people would never have smallpox, for surely no bigotry could be more pronounced than that manifested by the antivaccinationists of the Philippines. It seems almost incredible that in spite of the absolute proof that effective vaccination practically makes smallpox impossible, there should still be dissenters.

If the so-called special visitations of Providence for the purpose of convincing people of their error could be logically considered in the category of sanitary measures, the awakening realization of the thoughtful sanitary sense of the people caused by a virulent epidemic is productive of enough good to warrant more than a passing thought on the things that happen for reasons beyond the scope of human knowledge.

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In regions remote and difficult of access, to which it is impracticable to deliver vaccine virus in a fresh state, the blame must rest with the conditions and not with the people. In these sections it is not likely that a complete disappearance of the disease will occur until improved methods of preserving vaccine virus are devised.

Between November and March considerable difficulty was encountered in supplying a potent vaccine. A committee composed of a representative of the bureau of science, one from the medical school, and one from the bureau of health was appointed in April for making a study of this question, but up to the close of the year the report had not been rendered. During March new strains of virus were imported from Japan and Saigon, and shortly after this the potency increased, and the number of takes among all classes, vaccinated and unvaccinated, is again above 50 per cent. (For complete statement as to numbers and results, see the statistical tables in the appendix.)[a]

The bureau of health has nothing to retract with reference to the importance of vaccination, and will continue to urge it on the people as one of the most effectual prophylactic safeguards known to medical science.

The Iowa Health Bulletin, in a recent number, took up the subject of statistical proof of the protective influence of vaccination, and showed that documentary evidence to support all that was claimed was not wanting. According to this evidence, London has records reaching as far back as 1629, and Genova as far back as 1850. In other countries, while the records are not so comprehensive, they are sufficient to give an idea of the prevalence of smallpox before vaccination. In England the rate was about 3,000 per 1,000,000; in London it was over 4,000 per 1,000,000. Now the rate is less than 20. In Prussia the rate before vaccination was slightly over 4,000, but on the adoption of vaccination it began suddenly to decline, and continued to do so until the vaccination law of 1874 was enforced, when the cases became fewer and fewer, until now the rate is less than 2 per 1,000,000. Sweden had a death rate from smallpox for sixteen years prior to 1800 of 2,049 per 1,000,000, while the rate from 1802 to 1811, under voluntary vaccination, fell to 623. In 1816 compulsory vaccination was enforced and for the next ten years the rate was 133. By 1899, one hundred years after vaccination began to be practiced, the death rate had fallen to 1 per 1,000,000. Compulsory vaccination has been in force in France only since 1902, the rate of smallpox in the army being now 4 per 100,000. Vaccination was introduced in Austria in 1808, and was optional until 1900, when all school children were required to be vaccinated before entering. Vaccination and revaccination are compulsory for the army and navy. Denmark, since 1810, has required all children to be vaccinated before the seventh year. Revaccination is compulsory for the soldier and inmates of public institutions. Italy has had compulsory vaccination since 1888. All children are required to be vaccinated within the first six months, and if this is unsuccessful, to be revaccinated before they are a year old. Before the law was in effect the death rate for smallpox was 610 per 1,000,000; in 1902 it was 9.7 per 1,000,000. In Belgium and Holland it is not compulsory, although all public officials and the army are required to be vaccinated. In Holland, while not obligatory, all children must go to school, and no child can attend without being vaccinated. The teachers also must be vaccinated. India prohibited smallpox inoculation in 1880 and made vaccination compulsory. Similar laws are in effect in Austria, New Zealand and Cape Colony. Vaccination is optional in Russia except in the army and public service. The great majority of the people do not avail themselves of vaccination, so epidemics are not uncommon. In Persia, Siam, and China little vaccination is done, therefore smallpox is endemic. Japan has enforced compulsory vaccination since 1886, whereby the greater portion of the population has been vaccinated and revaccinated, thus restricting the disease almost altogether to the floating population which actually escapes vaccination. No provisions are made in any of the cities for smallpox hospitals proper. When a case develops it is usually allowed to remain at home, or taken to a general hospital for treatment. No quarantine measures of any kind are enforced. The same also may be said with regard to the German Empire, where no precautions are taken, in the strict sense of the word, against the spread of smallpox, the whole reliance being upon vaccination. It has been stated by those who opposed vaccination that the reason the German Empire was so free from smallpox was the superior facilities for the isolation and treatment of cases, and not vaccination. This was investigated by the local government board to ascertain just

[a] Omitted and filed in the bureau of insular affairs, War Department.

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what methods were employed by the Government and municipalities for the prevention of smallpox. Accordingly, an agent was sent to make this investigation. He encountered serious difficulties from the first. In Berlin he was informed by the central health officer that so far as it was known there were no smallpox cases in Germany. The principal cities of the four chief states of Prussia, Bavaria, Saxony, and Württemburg were visited. In 10 cities of these states, containing a population of over 5,000,000, or one-tenth of the population of the German Empire, he did not find a single case. As a matter of history he ascertained that there had been 70 cases in seven years, 1895 to 1901, inclusive: In cologne, 1 case in ten years; in Frankfort, 9 cases in ten years; in Wiesbaden, 12 cases eleven years ago, but none since then; in Mainz, none during eleven years; in Munich, 7 cases in eight years; in Nuremburg, none for about eleven years; in Dresden, no deaths for the past ten years; in Leipsic, 8 cases in eight years; and in Stuttgart, none in six years.

Vaccination in the United States is not compulsory. It is, however, made obligatory in many of the States and municipalities, but this ordinarily applies only to school children. Children are debarred from attending school unless they are vaccinated. While vaccination is generally practiced, there are many of the population, particularly in our Southern States, among the negroes, who do not vaccinate, and for this reason smallpox is not an uncommon occurrence among them.

The United States Government now requires that all alien immigrants shall be vaccinated before being allowed to land. This has been the means of reducing the danger from this source almost to a minimum.

The vaccination law of the Philippine Islands requires that every person living in the archipelago who can not furnish satisfactory evidence, either by certificate of recent date from a president of a municipal board of health, public vaccinator, duly qualified physician, or such other person as the director of health may designate, to the effect that he is immune against smallpox, shall submit to vaccination as often as may be required by a municipal board of health, or by a district health officer, or by the director of health. This requirement at first sight appears to be perfectly satisfactory, but the trouble is the different and various interpretations placed on the word immune and the ease with which certificates of immunity may be had. A person perhaps may be immune to-day and susceptible to-morrow, or vice versa; therefore, the only safe precautions are to be vaccinated as frequently as practicable, unless a recent successful vaccination is known to have been performed.

MOSQUITO PESTS.

Owing to the fact that malaria is practically never contracted in Manila, not much money has been expended for exterminating mosquitoes. It was felt that money available for purposes of this kind would yield more concrete results when devoted to vaccination, the value of which is not in dispute. Residents of swampy, undrained sections of Manila continue to suffer annoyance from the culex fatigans at night, and the stegomyia fasciata in the daytime. However, it is proper to state that lowlands, when practicable, have been caused to be filled in or drained, and oil has been spread on stagnant pools and ponds which could not be subjected to more drastic measures. These methods are very effective and when properly applied are not cumbersome, but they are as yet too expensive to urge upon the small towns. Some method of more general application is needed. The merits of various culicides are now under investigation by the hygienic laboratory of the United States Public Health and Marine-Hospital Service. In a report which was published in the public health reports, June 29, 1906, it was asserted that the fumes of pyrofume, a liquid derived from the fractional distillation of pine wood, are deadly to stegomyia calopus and culex pungens. Mosquitoes placed in cages on the floor of a room containing the fumes from 265 cubic centimeters of this liquid to each 1,000 cubic feet of air space were found dead after one hour.

The preliminary studies inaugurated by the Surgeon-General comprised a series on the culicidal properties of camphor-phenol, sulphur, and pyrofume.

In the experiments, great care was taken to protect artificially the mosquito in such a way as to simulate the conditions which ordinarily aid it in avoiding the effect of harmful gases. The experiments confirmed the reputation gained by sulphur in quarantine practice. Camphor-phenol appeared to be uncertain in its action and not possessed of powers of penetration and diffusibility, especially in low temperatures. As a result of the further experiments with

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pyrofume, it was determined that the fumes of this agent, when generated in the strength mentioned, are deadly, when the mosquitoes are exposed in a cage on the floor in the open; but when they are artificially protected the amount of pyrofume must be increased to such an extent as to be injurious to the furniture.

Sulphur must be relied upon for the present as the most efficient insecticide, though it, too, is, in a measure, destructive. It is believed that a reliable and safe culicide will eventually be discovered. When this is done, the mosquito problem will have been completely solved in the Philippines and everywhere.

CIVIL SERVICE MEDICAL EXAMINATIONS.

The civil service medical examinations are divided between the bureau of quarantine service and the bureau of health, the former examining applicants for maritime positions, the latter for land positions.

Examinations by the bureau of health are made by a medical inspector detailed from the regular force, who devotes one hour each day to this work.

From August 16, 1907, to the close of the fiscal year (period from July 1 to August 15, 1908, included in last annual report) there was a total of 516 persons examined by this bureau, 453 of whom were passed, and 63, or more than 12 per cent, rejected. The respective occupations were represented as follows.[a]

The physical requirements are being more and more stringently enforced in order that the public service may not be embarrassed by that species of government employee invalidism that is frequently found among public servants elsewhere.

Tuberculosis is one of the more frequent causes of rejection, and heart lesions and trachoma are also frequently found.

STREET PAVING.

When the Americans came to Manila they found a few of the principal streets of the city paved with large cobblestones over which the native vehicles rattled with careless abandon and deafening noise. In the Escolta and Calle Rosario, ambulances containing patients had to proceed at a walk even with emergency cases, in order that further injury might not be inflicted. These two streets being the principal business thoroughfares, were the first to receive the attention of the department of street construction and repair. It caused the stones, which were separated by cracks difficult to keep clean, to be replaced by wooden blocks, which gave a smooth, even surface, easily cleaned, so that these streets presented a neat appearance. These, after a few years' service, have, in many places, so decayed as to constitute a menace to the public health, as the holes and depressions become filled with dirt and present an unsightly appearance as well as unsafe surface.

A smooth, durable street paving for oriental cities which is at the same time sanitary, does not yet appear to have been found. Asphalt, owing to the continuous heat, becomes so soft that the depressions of the horses' hoofs and of the wheels of the vehicles make an uneven surface. It is believed, however, that further experiments should be made with asphalt with the view of producing a more durable surface. At present it is proposed to use wooden blocks which have been impregnated with creosote under pressure.

NEW SEWER SYSTEM.

During the year 24.4 miles of streets sewers were laid, which, added to the 14 miles laid last year, makes a total of 38.4 miles. The total amount contracted for was 52 miles, so that only 13.6 miles yet remain to be laid.

The contracts for the pumps and pump houses have been let, and some of the work is actually under construction. Before the close of the fiscal year, which ends June 30, 1909, the new system will, no doubt, be in working order, and it is hoped that the majority of the noisome wagons and other primitive methods for the disposal of night soil will be a thing of the past. Upon the completion of this enormous sanitary undertaking, Manila will rank as the first city in the Orient to have a complete water carriage system for the disposal of sewage, and therefore compare favorably with the western world in this respect.

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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SWEEPING PUBLIC BUILDINGS.

On account of the danger of transmitting tuberculosis and other diseases by the means of dried sputum, which accumulates on the floors of public buildings, the following letter has been addressed to the executive secretary:

MANILA, P. I., *March 25, 1908.*

The EXECUTIVE SECRETARY,
Manila.

SIR: I have the honor to hand you herewith copies of a circular on the subject of cleaning of public buildings, with regard to the danger involved therein, and to request that you forward the same to the chiefs of the various bureaus in Manila with a view to having the recommendations therein adopted.

Very respectfully,

VICTOR G. HEISER,
Director of Health.

(Copy of circular.)

DEPARTMENT OF THE INTERIOR,
BUREAU OF HEALTH FOR THE PHILIPPINE ISLANDS,
Manila, March 24, 1908.

It has been noted by this office that in the routine cleaning of the various government office buildings in Manila a vast quantity of dust is raised, and that such cleaning is frequently begun while many employees are still at their desks. By reason of the prevalence of tuberculosis in the Philippines, and of careless habits in spitting, such dust contains numbers of tubercle bacilli, which are the active agents in the production of tuberculosis, and which gain access to the body through being inhaled. To begin sweeping while employees are still in the building forces such employees to inhale the germ-laden dust, which can not fail to be productive of disease.

It is therefore respectfully requested that the attention of the persons supervising the janitor service in the various public buildings be invited to this matter, and that the practice of sprinkling the floors thoroughly with wet sawdust before sweeping is begun be adopted as a routine, and that sweeping be begun only after the building is vacated.

VICTOR G. HEISER,
Director of Health.

The method is so simple, inexpensive, and effective, as proved by the experience in the public buildings in which it was immediately put into operation, that it is recommended as a general measure.

In addition to the feature of safety, which alone is sufficient to commend it, the saving of labor and time spent in dusting more than compensates for the slight preliminary trouble.

INFANT MORTALITY.

Notwithstanding the fact that the subject of infant mortality has been given more attention by this bureau and by the various philanthropical societies of Manila than any other question that has come up for consideration, the death rate among young children still continues very high.

Not only has this subject engaged the attention of health organizations and societies in the Philippine Islands, but in other parts of the world it has been a topic to which even presidents, kings, and emperors have given heed.

In all the large cities of Europe there exist societies for combating the causes which determine the excessively high death rate among the children of poor people. In the United States, where the conditions are more favorable, the exigencies of the situation have not been sufficiently alarming to awaken public interest so generally as in countries less fortunate, yet there is nevertheless an enthusiastic movement for the better protection and care of infants. Nature evidently intends that every child born shall take part in the great drama of life, and live until all the purposes which called it into existence have been satisfied. So determined is she that the success of her plans shall not be impaired that she has apparently established a law fixing a direct ratio between the birth rate and the infant mortality rate.

So far as the effects upon the census statistics are concerned, a high death rate among infants, unless brought about by epidemic diseases or other special causes, does not alarm the health officer, as he knows that it will be offset by a higher birth rate; but no one wants the children to live more than he, be-

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cause he realizes that the bearing of healthy children is a blessing to womankind and to the world at large, while the bearing of sickly children, soon to die, is a misfortune to humanity, and that it incites unfavorable criticism on those intrusted with the supervision of the public health. The tiny graves in the cemetery are seen by many, but few hear of the efforts by self-sacrificing physicians and the faithful workers in the children's cause to prevent these graves.

In Manila where the statistics show that 4,184 children under 1 year of age died during the year, or, as estimated, about 44 per cent of the total number of deaths, there has been as much done by the health authorities, by the Gota de Leche Society, by the churches, by the schools, by charitable people, and by physicians as in any city of equal size in the world.

In the Meisic Public School, in the domestic science department, mothers are invited to bring in their children, and then in the presence of the class the whole subject of infant feeding is demonstrated, from the value of a balanced diet to the care of the containers in which the milk is kept. Flannel for the protection of infants has been distributed gratis from all the health stations. This bureau has encouraged the formation of an obstetric department in the Philippine Medical School, in order that midwifery might be properly taught. In the Gota de Leche Society sick babies are being fed, and the hygiene of the body is being taught to Filipino mothers.

The district health officers from the outside have been called in for consultation with a view of organizing similar societies in the provinces. The churches have taken up the question; pamphlets have been written by Filipino physicians, translated into all the dialects, and given extensive circulation at the expense of this bureau, yet the visible results are few; but the foundation is being laid and the structure of a stronger generation being built.

Recent investigations by this bureau have revealed the fact that a large proportion of the inhabitants is suffering from intestinal parasites, especially the hookworm, which produces a condition of anemia and weakness which is transmitted as an effect to the offspring of parents so afflicted. Active measures are to be taken to combat this condition, and it is believed that results will show favorably in the children to be born, making them more resistant to diseases, and thus prolonging their lives.

AMBULANCE SERVICE.

The bureau of health and the police department of the city of Manila cooperate in conducting the city ambulance service, the latter handling the emergency cases, and the former looking after the transportation of those of dangerous communicable diseases, and also of cases for the Civil Hospital. Arrangements have been made to extend and concentrate the facilities of the service. A central station is to be established near the Bridge of Spain, and the latest modern motor cars will be installed. These will not be characterized by distress or horror signals and the clanging of bells, but will pass quietly through the city on their missions of mercy, without attracting attention. One of the first official acts of the present director of health was to eliminate the pyrotechnic display in the ambulance service.

The improvements now being introduced will decrease expenses and increase the efficiency of this important branch of health work.

ANTHRAX.

Considerable public attention was drawn to the disease of anthrax during October on account of cattle suffering therefrom being found among those imported from Hongkong. This immediately led to the question as to whether there was any danger of the disease spreading to human beings, and as to whether any human cases had heretofore occurred in the islands. In view of the fact that the hides are not extensively handled here nor manufactured into leather, and that only the meat of anthrax cattle would be of particular danger, it was thought that human beings were not seriously menaced by anthrax from importations of cattle under existing conditions.

Several cases of human anthrax have been reported in the Philippines, but the points at which they are said to have occurred are so remote that no microscopical examination could be made, and in view of the common custom of local physicians to refer to ordinary carbuncle as anthrax, it would seem to indicate that in all probability the cases which were reported were not due to the Ray fungus.

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BERIBERI.

Beriberi has been a very serious matter in the Orient. Prior to 1884 an average of 33 per cent of the available strength of the Japanese navy was entirely disabled on account of this disease. During the war with China, in 1894, about 45 per cent of the Japanese army was disabled for actual warfare by the same malady. The reports of the same army in 1904 and 1905 show that one-half of the sickness, and practically one-quarter of the entire sick and wounded, consisted of those ill with beriberi, the total number of such cases being about 85,000.

The disease must be reckoned with in other directions than military operations, as it is also a factor of considerable influence in many public and private enterprises. It is met with in the mines of the Federated Malay States, and among the laborers of Java. It prevails also to a certain extent in the Philippine Islands, especially in camp life. In the public institutions, such as jails and prisons, it is much less known than formerly. The number of cases in the Philippines can not be approximated with accuracy, as it is by no means a necessarily fatal disease. Many patients are cured by change of residence and a change of diet, thus showing that the food question in relation to this disease is still a pertinent one. Whatever may be the real cause, it must be admitted that overcrowding, bad ventilation, and improper food strongly predispose to the disease.

Dr. L. H. Fales, of Madison, Wis., formerly a medical inspector in this bureau, says that a study of an epidemic which occurred in Bilibid prison during his connection with that institution seemed to point to the lack of fresh vegetables rather than the small proportion of nitrogenous food, as the determining cause of the disease, for the following reasons:

"1. Those who had access to the preparation of the vegetables and had the opportunity to take more than their share of them had no beriberi.

"2. When the vegetables were almost entirely discontinued for a time as a part of the ration, the mortality from beriberi became higher.

"3. Some months after the epidemic had been under control, prisoners from the prison, many of whom had had beriberi, were sent to work on the Benguet road. So many of these were attacked by beriberi that it was found useless to try to use them, and they were returned to the prison. Information at the same time was received that they had been provided with scarcely any vegetables.

"4. At the time of the epidemic of beriberi in the prison, many of the prisoners suffered with a peculiar form of sickness which was believed to be scurvy. The number of these cases exceeded 50. There was gradual loss of strength, the gums became red, spongy, and swollen, there were extensive hemorrhages into the muscles, usually into the muscles of the leg. The hemorrhages would be followed by marked induration. The muscles became almost board-like in their consistency, and the patient could walk only with great difficulty. On post-mortem, hemorrhages were found in various parts of the body. One case of hermopericardium was noted. On the addition of lemons to the diet of these patients, or increasing the vegetables, they recovered. There is no doubt, therefore, that with the epidemic of beriberi we had an epidemic of scurvy, although in much smaller proportion."

The number of deaths from beriberi in the city of Manila for the period covered by this report was 514, as against 423 for the preceding year.

CANCER.

The subject of the prevalence of cancer in the Philippine Islands has been carefully studied by Dr. F. W. Dudley, formerly of this bureau, but now associate professor of surgery in the Philippine Medical School, and attending surgeon to the St. Paul's Hospital, whose conclusions as published in a recent number of the Journal of the American Medical Association are that:

"1. Cancer is not confined to temperate climates.

"2. It is believed that cancer exists in the Philippines to a greater extent than in the United States.

"3. The measures now being taken in other more enlightened countries to warn the people of the necessity of early diagnosis and to emphasize the importance of early surgical treatment should be adopted here.

"4. The disease is of sufficient importance in the Philippine Islands as to warrant an effort being made to obtain better statistics in the future."

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The records of the surgical clinic at St. Paul's Hospital show that since the establishment of the hospital, April 8, 1905, to June 30, 1908, a period of a little more than three years, 55 cases of carcinoma were treated. These cases came under the following classification: Tongue, 1; face, 1; breast, 7; cheek, 8; cervix uteri, 9; eye, 4; inferior maxillary, 3; buccal cavity, 5; larynx, 1; pancreas, 4; penis, 1; scrotum, 1; rectum, 2; stomach, 4; leg, 1; lip, 1; foot, 2. There were 25 admissions for sarcoma, classified as follows: Pancreas, 1; ear, 1; mastoid, 1; parotid gland, 2; metatarsal bone, foot, 2; neck, 6; femur, 1; tibia 1; cranium, 3; orbit, 1; testicle, 5; arm, 1.

The portent of these statistics is modified by several factors that deserve to be taken into consideration, among which is the reputation of the surgeon as may be inferred from the fact that of the patients presenting themselves, about two-thirds were too far advanced for any treatment, thus showing that the majority of the patients were finally led to apply for relief through the reputation of the clinic. These people probably came from all parts of the islands, therefore it would be inaccurate to estimate the real prevalence of cancer in Manila upon the basis of the number of cases recorded in the hospital reports of the city, or to judge the situation throughout the entire archipelago from such data. The provincial statistics are of but little value and they embrace under the same classification all forms of malignant growths, including frequently the lesions of lupus.

The total number of deaths from cancer in Manila, a city of about 225,000 inhabitants, for the fiscal year, according to the bureau of health statistics, was 73, classified as follows: Buccal cavity, 15; stomach and liver, 10; peritoneum, intestines, and rectum, 3; female genital organs, 13; breast, 5; skin, 6; not specified, 21.

Cancer patients from every part of the islands are sent or come to Manila in the last stages of the disease, and are either admitted to the hospitals to die or are cared for by their friends and relatives. The Filipino idea of a hospital, handed down from Spanish times, is that such an institution is a place for the administration of extreme unction, and for effecting the change called death; hence his journey thereto is a final pilgrimage before passing over the great divide.

There is no well-defined line between permanent and transient residence in the Philippines, especially where the question of special privileges is involved. The city of Manila has a contract with both the St. Paul's Hospital and the San Juan de Dios Hospital for the care of the local indigent sick, but probably every province in the islands is a beneficiary of the city's generosity. At the present time there is no remedy for this, nor do the dictates of humanity or mercy call for one. But due credit, however, should be given these facts in making deductions with regard to the degree of prevalance of any disease throughout the Philippine Islands, on a basis of the hospital reports and official mortality statistics of the city of Manila.

CHOLERA.

The death rate in Manila has to some extent been augmented by Asiatic cholera, which has probably been present since the early part of the first quarter, at which time a few cases of gastro-intestinal disorders closely resembling cholera were reported, though the suspicions were not confirmed by laboratory examination. It was not until the last of July that the presence of cholera in Manila was actually confirmed by laboratory diagnosis. Since that time the disease has been more or less prevalent, and during the last week of the quarter above referred to the number of cases averaged about three daily. The disease was not confined to any particular locality, as the cases were found widely separated, with no apparent relation between them. If there had been a central focus, the matter of suppression would have been simplified. Painstaking efforts were made to trace every case and to connect it with some other case, and while such efforts were not entirely successful, they led to the conclusion that the most probable source of the disease was the unhealthy and filthy practice of the market gardeners of fertilizing their products with human excreta. The secret service was asked to investigate the matter, and it was not long before convictions were secured, thus substantiating the conclusions which had been reached by the bureau.

During the early part of July cholera suddenly made its appearance in Carigara, Leyte, and prevailed for several weeks, the number of cases averaging about 10 per day. Owing to the indifference of the local officials, the insti-

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tuting of active measures against the epidemic was considerably delayed, and it was only through the indefatigable efforts of the district health officer for Leyte, with the support of the governor of Leyte, that the progress of the disease was checked. This bureau immediately detailed a sanitary inspector of experience to assist the district health officer, and by their efforts the spread of the disease was limited, only two other municipalities having been infected, viz, Tunga and Barugo, which are practically suburbs of Carigara. During the latter part of August the disease appeared in Mandaon, Masbate, the infection, in all probability, having been carried there by the sailboat *Carlita* coming from Carigara. Before the *Carlita* could be subjected to quarantine regulations she had done other mischief. Cases were reported in Romblon and other near-by islands. Fortunately, the matter was taken in hand by the local officials and a spread of the disease prevented. The district health officer of Sorsogon was sent to take charge of the outbreak in Masbate, and was able to limit the same to the municipalities of Mandaon and Milagros. At the close of the quarter only about two cases were occurring daily, and prospects were good for its complete extermination. Subsequent events proved the correctness of this view.

During October, November, and December the disease appeared in the provinces of Bataan, Bulacan, Pampanga, and Rizal, there being 3, 85, 234, and 7 cases, respectively, reported from these provinces. Active measures were taken by the district health officers in charge, and during January a decline in the number of cases was noticeable. By the first of March the disease had almost completely disappeared.

In Manila, however, the conditions were not so favorable. During the closing days of the old year, and during the first week of January, the outlook in the city assumed a rather serious aspect. Cholera increased from day to day and on January 6, 17 cases occurred. The reappearance of the disease in the city was ascribed to the reinfection by visitors who came here to spend Christmas; many of these persons, no doubt, came from infected places and were in the incubation period of the disease when they arrived here. It was also probable that some of the stools containing virulent cholera spirilli found their way into the possession of market gardeners who used them for fertilizing purposes. With regard to this latter practice, it is perhaps not generally understood that human excreta is used by the gardeners in the Philippines not so much for fertilizing purposes as for its destructive effect upon the insect enemies of the garden products of the Tropics. It is used by sprinkling a solution upon the plants. From this it will be seen that a head of cabbage, for instance, may be infected from its very center to the outside as it gradually forms when daily sprinkled by cholera-infected material.

On January 3 the disease made its appearance in the Mariquina Valley, and thus the city of Manila was again most seriously threatened with an epidemic. During the first week of the outbreak, 45 cases were reported with 43 deaths. The governor-general, upon the request of the bureau of health, makes application to the commanding general of the Philippine Division for the detail of sufficient troops to patrol properly the Mariquina River and guard it against infection from cholera. Fortunately, the disease made its appearance first in the town of Mariquina itself, where a pail system is maintained by the city of Manila, and where there is probably reduced likelihood of fecal discharges finding their way into the water. Energetic measures were taken to stamp out the scourge in that locality and the efforts were rewarded with considerable success. During the week which followed only a few additional cases occurred and within ten days after the first outbreak no further cases were noted.

The sale of raw vegetables was again prohibited in Manila and an outgoing quarantine of forty-eight hours was placed upon all interisland vessels. This latter was completely successful in that it prevented the spread of the disease to other islands. It was not felt at any time that the disease had gotten beyond control or that there was any danger to persons who took the simplest precautions, but in order that visitors from abroad might not incur the slightest risk it was decided to postpone the Philippines carnival from February 3 to 9, inclusive, to February 27 to March 3, inclusive.

During March cholera made its appearance in Capiz Province and gradually spread until the towns of Capiz, Dao, Ivisan, Mambusao, Panay, Pilar, Pontevedra, and others because infected, a total of 673 cases being reported up to the close of the year. The residents of the towns of Panay and Capiz have been the principal sufferers. The local district health officer was given every facility to suppress the disease, and some 30 vaccinators who were on duty for the insular bureau of health were pressed into service as cholera inspectors; but the

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disease continued to increase. The district health officer from Iloilo was then sent to Capiz Province for the purpose of aiding in the work. The provincial board authorized the employment of a number of sanitary inspectors and the Philippine Assembly made an appropriation of ₱1,500 to be used in exterminating the disease. At the close of the year the epidemic was apparently under control.

It was also during March that cholera developed in Dagupan, Pangasinan Province, and with a view of interfering as little as possible with local autonomy the resident officials were urged to take the necessary steps promptly to suppress it. For this purpose Sanitary Inspector Brantigan was detailed to aid them, but the local officials were so indifferent that the disease spread rapidly, and during the month of June it became necessary for the bureau of health to take direct charge of the situation. Seven medical officers of the bureau were detailed for the work, but the disease had already become so thoroughly established that considerable time will no doubt be required to eradicate it.

The cholera soon spread along the main routes of travel from Dagupan, as far north as Baguio on the Benguet road, to Aringay on the coast road, and was also carried to Santa Maria, Ilocos Sur, by parao, and to the west to Agno and Bolinao in Pangasinan. Along the railroad it spread as far south as Tarlac, and as far east as Cuyapo, Nueva Ecija. It has been repeatedly brought to Manila, and cases have also been found in Pampanga, Bulacan, and Bataan provinces, but so far there has been no spread from these cases. The disease also appeared at San Nicolas and Tayug, through which passes one of the principal roads into Nueva Vizcaya. After several weeks of strenuous work some of the apathy of the local officials has been overcome, and where this has been brought about the situation has improved immediately. In Dagupan the number of cases was quickly reduced from 17 or more per day to 3 or 4. In Lingayen the disease completely disappeared. In towns like Manaoag and Mangaldan, where there was great indifference to sanitary measures, there were several hundred cases. The aid extended by the priests of the Catholic Church and the schools in diffusing the information contained in the cholera circulars has been of great assistance, and is doubtless responsible for the saving of many lives.

The plague of flies which existed in Pangasinan Province was no doubt largely responsible for the great number of cases, as were also the fiestas and pilgrimages taking place in these provinces. Another cause of the spread of the disease was the fact that on account of the difficulty of communciation many remote municipalities were infected long before the knowledge reached the district health officer, so that in such instances very little effort was made to limit the spread of the disease until it was too late.

In spite of the fact that the conditions in Pangasinan Province were not encouraging at the close of this report, yet they are much better than in 1902. The strenuous measures which were adopted at that time did much to arouse the opposition of the people, and the passive resistance which was then engendered is still felt, and no doubt is largely responsible for the opposition which is made to sanitary measures. This time, as soon as the people learned that their homes were not to be burned and other costly measures were not to be taken, at least some cooperation has been received. This latter course has therefore been fully justified by the lesser number of cases as compared with 1902.

At first sight it would appear as if the diffusion among the masses of the plain, simple truth that cholera can only be contracted by the introduction into the mouth of contaminated food or drink, and that almost absolute safety against infection can be insured by the simple precaution of using sterilized water and cooked food, would result in its early disappearance; but when it is remembered that the climate is favorable for the development of the cholera organism throughout the four seasons of the year—in other words, that there is no winter season which would at least stop the disease for a time—that a large proportion of the people are ignorant and inaccessible; that much superstition exists; that one of the most popular beliefs is in the supposed injurious character of boiled water; that the cost of fuel is comparatively high, making sterile water and cooked food difficult for the masses to obtain; that the majority of the people cling tenaciously to the mode of living which has been customary with them for hundreds of years; that food is conveyed to the mouth with the fingers from a receptacle used by all the household; that over 60 per cent of the population are afflicted with intestinal parasites; that with

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the possible exception of the supply for a few hundred thousand out of a total of 7,000,000, the drinking water is obtained from shallow surface wells; that physically the people are weak and unresistant, and that funds and skilled physicians needed to combat this condition are very limited, it will not be so difficult to understand the continued presence of cholera in the Philippines. The funds for fighting cholera now are also very meager as compared with 1902.

It is believed that sanitarians of experience will all agree that the best hope of completely eradicating the disease from the islands lies in the education of the masses with regard to the manner in which the infection spreads and the introduction of better water supplies. Both of these conditions are being met as rapidly as possible; the press, the schools, the churches, and the government officials are all aiding in this work, and with the appropriation of ₱150,000 made by the Legislature, artesian wells are being bored as rapidly as the facilities of the government will permit. From the foregoing it will be apparent that the policy of the bureau of health is to give consideration first to those sanitary reforms which will make cholera outbreaks impossible in the future, and only spend such sums upon combating the disease as the dictates of humanity demand.

AMŒBIC DYSENTERY.

Amœbic dysentery has been the most formidable opponent to American occupation of the Philippine Islands that has been encountered, yet it belongs to the class of preventable diseases that could almost always be avoided by adherence to simple hygienic rules. In order to insure absolute safety, elaborate precautions would have to be observed; but it may be stated from a practical standpoint that this disease is almost unknown among those who wash the hands immediately before eating, drink water only that has been sterilized by distilling or boiling and kept protected from contamination, and who do not eat in a raw state low-growing garden vegetables like tomatoes, celery, cabbage, onions, and lettuce.

The disease is not nearly so prevalent as in years gone by, but it still remains as one of the greatest causes of invalidism of government employees, and also figures conspicuously in the army sick reports.

The number of cases treated in the civil hospital for the fiscal year covered by this report is 81 as compared with 85 for last year. Of the total number of deaths in Manila, 32, or 34 per cent, were caused by amœbic dysentery. The native population is not exempt from this disease, as has been shown by the autopsies made at the Malecon morgue.

Rest is indicated in all systems of treatment for dysentery, and a part of the success of the ipecac method is, no doubt, due in part to the enforced rest which it enjoins. In mild cases, however, it is frequently inexpedient to require the patients to be confined to bed. The method of treatment that has generally been employed by American physicians since their advent into the Philippines has been the administration of drugs of germicidal action in dilute solution of high enemata. This treatment, while in many cases very efficient, is open to certain objections, the principal of which is the liability of injury and the difficulty of carrying it out correctly unless it is administered by a physician or a trained nurse. The time required is so long and the inconvenience so great that in many cases it is desirable to alternate it with, or substitute therefor, the simaruba and sodium sulphate treatment, which is extremely simple and very effective. It consists of the administration of 100 cubic centimeters of a 50 per cent solution of sodium sulphate every second or third day and three-hour tablespoonful doses of a mixture composed of: Simaruba pulvis, 3 grams; benzo naphthol, 3 grams; subnitrate of bismuth, 8 grams; sirup of krameria, 30 cubic centimeters; "potion gomosa" (excipient), 200 cubic centimeters.

The question of diet in this treatment should be the subject of attention, and when necessary, patients must be placed on liquid or semi-solid food, as may be indicated.

If there is collapse or acute diarrhea, warm saline enemata should be administered every two hours until the acute symptoms subside, while in the meantime the patient's bodily heat and strength should be conserved.

This treatment has the advantage of being simple of administration, comparatively free from danger, and so convenient that, except in severe cases, patients may pursue their ordinary vocations with safety.

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GANGOSA.

This disease, which was recorded in the last annual report, has not figured in the mortality statistics of the present year. One case was presented to the Manila Medical Society at the meeting held on October 14. After being examined by a number of those present, the consensus of opinion was that the correct diagnosis was probably an atypical form of syphilis. The case presented no particular symptoms with the exception of a perforation of the hard palate with some involvement of the nasal septum.

In view of the fact that the various leper expeditions which were sent out to the provinces has had gangosa in mind, and that no cases resembling this disease came under observation, it would seem to indicate that the disease is of rare occurrence in the Philippine Islands.

INSANITY.

Certain comparisons were made in the last annual report with reference to the prevalence of insanity in the Philippine Islands and other countries, and it was shown that in the United States there was 1 insane or feeble-minded person to every 304 of the population, while in the Philippine Islands only 1 person in every 1,667 was insane or defective. The percentage of recoveries under treatment was about the same as that of Great Britain.

The bureau of health census of the insane for the Philippine Islands shows that there were 2,029 males and 1,610 females, or a total of 3,639. Of the 1,972 male adults 1,375 are single, and of the 1,573 female adults 967 are single. Four hundred and twenty male adults and 330 female adults are married, while 115 males are widowers and 209 females widows.

The new insanity department of the San Lazaro Hospital mentioned in the last report as being under construction has been completed and is now in full operation. The building is constructed of reenforced concrete, which experience has shown to be as nearly earthquake proof as it is possible for structures of strong material to be.

The insanity law recommended by the bureau of health has not yet been enacted. The present legal machinery is without definite status, and in the case of contests the government would be helpless except in cases where crimes have been actually committed.

The distribution of insane by provinces is noted in the statistical part of the report. Authority has been granted each province to commit a certain number of insane, based upon the population of the province, to the San Lazaro Hospital by paying the cost of transportation from their homes to the hospital. The bureau of health has also been caring for the insane among the Philippine scouts (native troops of the islands), the actual expense of the same being borne by the military government.

INTESTINAL PARASITES.

Practical work and experience change many apparently well-grounded theories. In casting about for the influences operative in the still high mortality in the Philippine Islands, two factors seem to stand preeminently to the front—one the infant mortality, and the other the extensive prevalence of intestinal parasites. After some consideration infant mortality was dismissed from special study, as this is a subject which is much the same all over the world, and has been given great study and attention by persons working in communities where ample funds and trained help were available without having made great progress; so that it was decided to take up the question of intestinal parasites first. A fortunate incident occurred at this time which aided materially in the study of the problem. The death rate in Bilibid Prison under the administrative supervision of laymen had increased from year to year until the appalling figures of 238 per 1,000 were reached. The management of the sanitation of the prison was then transferred to the bureau of health. Ordinary sanitary measures, such as relieving overcrowding, improving the methods for the disposal of night soil, regulating the diet along scientific lines, improving the drainage, and other similar measures, succeeded in bringing the mortality down to about 70 per 1,000 in a period of six months; but persistent efforts carried on for nearly six months more failed to lower it further. Patients were dying from illnesses which should not have killed them. At this juncture a systematic examination of the stools of prisoners was begun.

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The same was undertaken by examining all the prisoners in a brigade, usually about 300 in number. In the first batch examined most astonishing revelations resulted. Eighty-four per cent of the prisoners were found to be afflicted with at least one intestinal parasite, 50 per cent had two or more, and 20 per cent had three or more. Fifty-two per cent of the total number examined had hookworms, which in itself would explain the lowered resistance to disease and the tendency among the prisoners to succumb to trifling complaints.

Specific treatment for eliminating the intestinal parasites was begun in a selected brigade, and after this was completed successfully the work was actively continued until all the prisoners, numbering over 3,500, were examined and the intestinal parasites removed. The percentage of parasites in the remaining group was about the same as that given for the first brigade. After the treatment was well under way the death rate in the prison commenced to fall gradually, and several months after the intestinal parasites from the last prisoner under observation had been removed, the death rate dropped to 13 per 1,000, and has remained low up to the present time, a period of over a year. These figures show in a most convincing manner the effect of the intestinal parasites upon the general health. They so reduce the resistance of the individual that he becomes a ready victim to almost any intercurrent disease which he may contract.

Records of over 1,000 stool examinations made of persons at large in the Philippine Islands show that practically the same condition of affairs exists among the general population, so that as soon as the intestinal parasites of the inhabitants can be removed, and the environment made so that they will not readily become reinfected, it may be confidently predicted that the death rate in the Philippine Islands will be lowered to figures which will correspond very closely to those found in temperate climates.

It will thus be seen that the magnificent work which has been done in connection with intestinal parasites by Stiles, Loos, and others, has pointed the way toward a sanitary reform, which will, no doubt, stand in medical history as one of its greatest triumphs.

The study of the question of intestinal parasites has now reached a stage where definite results can be predicted with reasonable certainty. In order to put this matter upon a still more practical basis, arrangements have been completed to send a small commission to one of the nearby towns for the purpose of treating the residents there for this condition. When this has been done, it is hoped that the beneficial results will be so apparent that towns throughout the islands will take up this question, which has such an important bearing on reducing the general mortality.

HOOKWORM DISEASE.

If there had been any question as to the influence of hookworn disease on the morbidity and mortality of the Philippine Islands, the revelations and results developed by the investigations carried on in Bilibid Prison under the auspices of this bureau would have decided the matter in favor of the necessity for the inauguration of an active campaign for the defense of people against this insidious, relentless foe to human life, to the happiness of mankind, and to the prosperity of the masses in tropical countries. The wide prevalence of the disease and the helplessness and hopelessness with which it has been regarded in the past are better explanations of many features of tropical sociologic and anthropologic conditions than many others that have been advanced. The presence of a swarm of hookworms in the intestinal tract of a man exerts more direct and immediate influence on his physical condition than the inclination of the sun's rays or the amount of pigment in his skin.

Some time ago the legislature of Porto Rico passed an act to create a permanent commission for the suppression of uncinariasis or tropical anæmia in that country, and made an appropriation of $50,000, United States currency, to carry on the work. The commission was charged by the law to use all means in its power to prevent, combat, and suppress the disease known as tropical anæmia or uncinariasis in the territory of its jurisdiction, and for that purpose the establishment of a central station, substation, and dispensaries, was provided for in the appropriation act. The results were gratifying to the medical men who were intrusted with the work, and saved the territory in human lives, as well as in industrial wealth, many times the sum appropriated.

This bureau has formulated plans for a more extensive campaign than heretofore has been inaugurated by any country against uncinariasis, and would

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have had some of them in operation but for the appearance of cholera in the provinces. It is purposed to undertake this work with the regular force, and without any special appropriation for expenses. The problem will be attacked along both educational and practical lines, that is, every effort will be made to carry relief to the sufferers and at the same time to teach the principles of prophylaxis, so that the cured may remain well and the noninfected may know how to avoid the disease.

As much publicity as possible with the means at the disposal of the bureau will be a feature of the campaign. Experience has taught that in the Philippines, and probably everywhere else, the best way to popularize a movement so foreign to the customs of the people as this innovation, is to prosecute it as if it were the only thing in the universe left undone. The success of the crusade will depend on a right start, but the people themselves, when they understand, may be relied upon to take care of the future in a matter of so far-reaching importance to their own lives and happiness, and so inexpensive and simple in adaptation as the remedy against the cause of tropical uncinariasis. There is not a resident in the islands who does not recognize the significance of the clinical aspect of uncinariasis, and when the actual cause of the disease is brought home to him by pictures, microscopic demonstrations, the display of exhibits, personal explanations, and convincing object lessons, he, too, will grasp the truths of prophylaxis and avail himself of the remedial measures presented.

The plan contemplates a sanitary awakening of the public along directions not heretofore pursued. Every available method of commanding the interest and cooperation of the people will be employed. Attractive exhibits of photographs illustrative of the disease and its causative factor will be a feature of the campaign, and the medical men in charge of the work will be able to demonstrate by microscope the various forms of ova of intestinal parasites, and to show the mature organisms. While the battle ground is to be the entire Philippine Islands, the first field of action will be those sections known to be the most profoundly infected.

Information blanks in the nature of card forms adapted from those used by the Porto Rican commission will be employed for collecting information and assembling final statistics. The forms will include a warning card, a clinical record card, an inspection card, and an announcement card for the purpose of giving notice of the arrival of the inspector; a card of instruction, especially for the employers of labor, showing how the hookworm may be suppressed; and a treatment card.

The instruction card used in Porto Rico under the heading of "Instructions to Farm Owners Concerning the Suppression of Anemia in Porto Rico" bore the following information:

"Anemia is the disease from which the majority of our country folks suffer.

It alone causes more deaths than all other diseases.

Those peons and others that you are sheltering and that work for you are not strong because they are anemic.

Should they become cured they would be better workmen.

Send them to us that we may cure and teach them to prevent the disease.

To prevent anemia remember that it comes from ground itch (mazamorra); that ground itch is only contracted where there has been earth soiling; that to avoid ground itch it is well to use hose. So advise your people.

But it is still more important that each house have its privy, and that no one defecate on the surface of the ground.

Prohibit your peons from defecating while at work on the plantation unless they cover each stool with a little earth that may be scraped up with a cutlass (machete).

Thus the excrement is covered and the worms killed."

While it was not expected that every farm owner would comply with all these instructions or that it were possible to produce ideal conditions, the results were more satisfactory than had been anticipated.

If the hookworm caused directly more deaths in Porto Rico than any other disease, what an alarming array of charges could be brought against this pest if it were called upon to plead to an indictment from the whole world for all the deaths that it is indirectly responsible for through its devitalizing influence on its victims and its profound impress on their offspring. Children born of anemic parents can not possibly possess that degree of vital resistance necessary to tide them over the critical period of early infancy.

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The life history of the hookworm when told in popular narrative style is more interesting than a novel, and could be made the subject of lectures, popular talks, and personal conversations without trespassing on the domain of delicacy. Sir Patrick Manson, the great English authority on tropical diseases, has so popularized the whole field of tropical medicine in the lecture courses which he has given in nearly every part of the world that it has been possible to adapt from his beautiful discourse a popular circular on the hookworm disease that can not fail to interest, instruct, and benefit the Filipino people. This bureau has now in course of preparation a simple language text which is to be used as the basis of the didactic instructions and general information circulars under contemplation. This text, in treating of the hookworm, takes up the question in its relation to anemia. The rough outline of the circular in speaking of uncinariasis is to the effect that "hookworm disease is not a new disease that has been discovered, but it is an old one formerly called anemia grave, anemia perniciosa, and 'falta de la sangre.' This often grave condition is dependent on the presence in the intestinal tract of a hookworm. The worm is very insignificant in size, but in consequence of the local irritation and vitiating action on the blood due to its food necessities, and to a poisonous substance called toxin which it is believed to secrete, this innocent appearing parasite brings about a condition of anemia in its host, that is, in the person in whom the worm exists. This anemia always produces a marked weakness which may lead to serious disease or death, and which, when affecting one or both parents, nearly always results in weakly, sickly children, who often die in early infancy or fall victims to this or some other disease during childhood. This is one of the reasons why so many Filipino babies and children die. The bodies they have inherited from diseased, anemic parents, can not withstand the germs of tuberculosis, malarial fever, amœbic dysentery, and other diseases of this class, or even the unfavorable changes in the weather, so they die before their time.

"In view of the fact that anemia is a very common disease in the Philippines and that it is robbing the parents of their children and the children of their parents, and producing sickness and distress of so serious a nature, it is of the greatest importance that the people should learn something about the cause for all this which is nothing more than a little worm that finds its way into the intestinal tract and attaches itself by two little hooks to the mucous or inner coat of the intestines and thus gets its food at the expense of the host. These worms do not occur singly but in great numbers; the more numerous they are the more grave will be the disease caused by them. They live in the small intestines and lay their eggs into the contents of the bowels, whence they escape with the feces. If the eggs, after they have thus passed out, are kept warm in a suitable medium, such as damp earth, they hatch out and a very small and at first very active little worm or embryo, so tiny that it can be seen only by the aid of a magnifying glass, is set free. These little creatures rapidly acquire organs of digestion, and after casting their skins several times, and undergoing other changes to fit them for their subsequent life, they are ready to reenter another human being; the person who is so unfortunate as to be the one into whom the worms enter being called their host, because he supplies them with food and with a home in his intestinal tract.

"It is known now precisely how reentry is often, if not always, accomplished. It was formerly believed that the young parasite entered the human alimentary canal by being swallowed in dirty water, or being transferred on earth-soiled hands or dishes to the mouth and thence to the stomach, but later investigations have shown that the most common method of infection is by a different route. The little worm penetrates the skin, generally that of the feet or legs of persons passing through or working barefooted in, or otherwise being brought into contact with earth in which the eggs of the hookworm have been deposited. The young worm enters the skin through some follicle, thence passes into a blood vessel which carries it to the heart, from which organ it passes by the pulmonary vein to the lungs, where it leaves the blood vessels and undergoes further changes for the purpose of enabling it to withstand the action of the gastric or stomach juice. The worm is on its way to the small intestines, its permanent abiding place, which it must reach before it can reproduce its kind. To get from its lungs to its final resting place, it enters an air vesicle in the lung and from the air vesicle it finds its way into one of the little tubes that carry air into the lungs and so on, by the way of the wind pipe, into which the smaller tube leads, thence upward until it can get into the lower part of the throat, finds its way into the tube leading to the stomach through

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which organ it passes and enters the small intestine, where it makes itself at home, and begins in its peculiar way to raise a family by producing eggs destined to pass out of the bowel, hatch in damp warm earth, and begin the round again.

"The most critical period in the life history of the little creature is the time when it is outside of the human body; millions of eggs are destroyed by unfavorable conditions and countless numbers of young worms lose their lives because they can not find an opportunity to continue their existence in human hosts. Should the temperature of the medium in which the young parasite is lying fall below a certain point, the necessary developmental changes are suspended or never commenced.

"Filipinos are quite familiar with a form of itch called 'mazamorra' or ground itch. This is an inflammation of the skin generally attacking the feet and legs, but at times other surfaces as well. The inflamed parts itch very severely and often become infected through scratching. Doctor Loos, a man who has studied this disease a great deal, has shown that the condition called ground itch or mazamorra is produced by the entrance of the little hook worms through the skin; in other words, that it is but a manifestation of the presence of the hook-worm disease. Sir Patrick Manson, an English physician who is a professor of tropical medicine in the great London University, in one of the several books he has written, tells a story of a planter living in the West Indies, who told him how at one time he was seriously inconvenienced by mazamorra among his farm hands. He noticed that this trouble was followed by profound anemia and also that the skin disease and anemia occurred principally among the employees who worked in or passed through certain fields of his plantation. The weather in the West Indies is warm, as it is in the Philippines, and the working people go without shoes and stockings, from which fact the planter argued that in these particular fields there were certain germs that, coming in contact with the legs and feet of the laborer, produced first the skin disease, and later on, after they had entered another part of the body, the anemia; so this observing man, believing that the disease was a germ or bacterium, sought to find some remedy to circumvent or kill it. In thinking on this subject he remembered a certain practice that he had seen in Germany where he had frequently gone for his health. In that particular part of the German Empire to which he was accustomed to go, geese are raised in large numbers. The goose market is a long way from the goose farms, so that the geese when ready for sale have to be driven for many miles over the hard roads. To enable them to stand the journey, the farmers provided them with close-fitting antiseptic socks or sandals, made by filling a shallow trough with tar, and through the trough the geese were driven on to a piece of ground covered with a layer of fine sand. The tar stuck to their feet and the sand to the tar, and thus they were provided for their long journey. The planter, acting on the suggestion offered by this practice, had his laborers dip their feet in a bucket of tar and then walk across a layer of sand or sawdust. The result was that no more ground itch was contracted because the skin was protected by the coating from the little worms. Other incidents could be related to show how easy it is to prevent the disease, but the matter is too plain to require further explanation.

"The first step in determining the presence of the disease is to suspect it. The next is to consult the local board of health or the local president who will be able to give advice as to when the physician engaged in this special work may be seen.

"The local physicians have for free distribution little cards with full directions, that must be followed before, during, and after treatment. The cases will be examined by the physician, and he, at the same time, will determine the diagnosis and administer the treatment.

"The opportunity is now presented for the people of the Philippine Islands to be cured of a very dangerous disease—one that prepares the way for many others. The cooperation and help of all is earnestly desired."

One of the main reasons why there is advocated elsewhere in this report the introduction of silkworm raising and the fertilization of the mulberry trees by human feces that have been exposed to certain destructive processes, is that only by making such feces of commercial value, will there be enough interest taken in the question of the deposit of night soil as to insure official regulation.

The combating of the hook-worm disease is certainly a large undertaking, and to those who are not familiar with what, in the light of past experience,

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has been brought within the range of possibilities, the whole proposition may appear as a chimerical dream. But it can be done, and if nothing occurs to prevent the execution of the plans, it will be done.

The Philippine Islands Medical Association at its last annual meeting, showed its interest in the great problem by passing the following resolutions:

Whereas it appears that the treatment of the prisoners for intestinal worms has been an important factor in reducing the death rate at Bilibid prison; and

Whereas it would appear further that over three-fourths of the population of the Philippines is at the present time infected with animal parasites; and

Whereas infection with these parasites can be controlled almost absolutely by properly disposing of the human excreta which contains ova of the parasites; and

Whereas the proper disposal of human excreta will at the same time remove one of the most dangerous channels for the dissemination of other infectious diseases: Therefore be it

Resolved, That the Philippine Islands Medical Association shall petition the government of the Philippine Islands, through the honorable Dean C. Worcester, secretary of the interior, that a commission of five properly qualified members be appointed to decide upon the most practicable and effectual means for the proper disposal of human excreta that can be established in these islands.

Be it further resolved, That the government of the Philippine Islands be petitioned to make such appropriation and provide such amounts for the establishment of a working system for the disposal of human excreta as from the report of this commission may appear practical and expedient.

It is not believed that the people, when they understand the matter, which they can not fail to do when the bureau of health has carried out its plans of sanitary mission appeals, will show any hostility to the movement, as the work will be carried on by the local officers so far as practicable.

Special effort will be made to avoid technical expressions in the circular, as it is intended to use it as a basis of popular and public enlightenment. The part relating to treatment has not been given, as the details of this part of the plan have not as yet been worked out.

LEPROSY.

Work on the project which had for its object the segregation of every leper in the Philippine Islands at Culion was actually commenced in May, 1906. Up to that time the relief extended to lepers was more in the nature of aiding the individual leper; the larger project of exterminating this disease from the archipelago was never seriously undertaken. In view of the conflicting opinions as to whether segregation could accomplish this, and the question of financing so large a project, considerable delay was caused in starting this undertaking.

The experience of the past two years, while not yet sufficient to form definite conclusions, is strongly indicative of the fact that not only will the disease be exterminated, but that the project will prove to have been most advantageous from a financial point of view. The foregoing is from the purely utilitarian standpoint; but, viewing it from the larger and, of course, first to be considered, humanitarian standpoint, the care of all of these unfortunates will redound to the credit of America as an act that will receive favorable comment throughout the civilized world.

At the time the work was commenced, it is estimated there were at least 3,500 lepers in the islands; at the end of the first year there were 2,826; and at the end of the present fiscal year the number was 2,486. The reduction in the number during the first year resulted largely from the fact that persons who lived in the islands of Samar, Leyte, Masbate, Romblon, and Negros who were classified as lepers were found to be suffering from other diseases. Not the least of the benefits derived by the collection of lepers in the provinces is the fact that many persons who had for years been outcasts from society on account of being afflicted with diseases that resembled leprosy were treated for the maladies from which they actually suffered and have again been restored to their rightful social status.

During the past year instead of finding less lepers than the reports showed, in a number of provinces many more were found. For instance, in the province of Albay there were 57 reported. After the examination of all the suspects was completed, 317 were found positive. In Camarines, instead of 33 there were 42. In Sorsogon, instead of 87 there were 121.

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These increases fully offset the erroneous diagnoses of the previous year, so that we must look for other reasons to account for the decreased number this year over that of the preceding. In view of the fact that 953 lepers were removed to Culion last year, and 1,554 this year, it is certain that at least this number of foci of infection was obliterated and the opportunity of contracting leprosy was just that much reduced.

From the foregoing it is estimated that at least 300 less persons contracted the disease. The advantage accruing therefrom will at once be apparent. Not only have over 300 unfortunates been saved from this, the most hopeless and loathsome of all human diseases, but just that many less charges have been thrown upon the body politic, and 300 nonproducers have been held in the producing class.

The actual work of collecting the lepers and caring for them after they are collected still presents obstacles, many of which at times seem unsurmountable. Regardless of what the opinion of people may be in the abstract, when it comes to persons who will do actual work of transporting them to a seaport, providing their subsistence, aiding them aboard the steamers, making the necessary medical examination, attending to their needs, experience has again and again demonstrated that they are most difficult to find, and only persons with superior courage can be induced to continue at the work. One of the greatest aids has been the enactment of Act No. 1711, entitled "An act providing for the apprehension, detention, segregation, and treatment of lepers in the Philippine Islands."

The practice of making a careful microscopical examination of each case has been faithfully carried out, and, no doubt, is largely responsible for the confidence which is displayed in the diagnoses made by the medical officers of this bureau. The attitude of the people of the islands as a whole toward segregation has been most gratifying. There is probably no place where family ties are closer than in the Philippine Islands. In spite of the fact that it has frequently been necessary to separate husband from wife, mother from child, brother from sister, friend from friend, they resign themselves to their fate, and in addition frequently aid the representatives of the law whose duty it is to carry out the segregation, when it is explained that such action is necessary for the good of the many. With the exception of a few isolated instances, the collection of the lepers has been carried on without any marked opposition or disorder. The only serious accident is that which occurred at Malitbog, Leyte, at which place two lepers became involved in a quarrel, as a result of which one was fatally stabbed. However, quarrels of this kind are not confined to lepers, and scarcely can be said to be connected with the question of segregation.

A frequent experience perhaps worthy of mention is the practice of many municipalities presenting their insane, blind, cripples, and other incurables who have become public charges, for transfer to Culion. These, of course, can not be taken care of upon a leper island, but when they are not taken away, much surprise is often shown.

The provinces of Mindoro, Masbate, Romblon, Capiz, Iloilo, Antique, Oriental and Occidental Negros, Samar, and Leyte, have already been gone over two or more times, and with the exception of a few isolated cases may be said to be free of lepers. The provinces of Cebu, Bohol, Ambos Camarines, Albay, Batangas, Tayabas, Sorsogon, Benguet, Lepanto-Bontoc, and Ilocos Sur have been gone over once, but are not yet regarded as being free of lepers, and they will necessarily have to be searched over one or more times again.

The present Legislature has made ample appropriation for continuing the work during the coming fiscal year along the lines mapped out by the Philippine Commission during the year just closed.

At the colony proper much work was accomplished, but it has not yet even commenced to assume the appearance it is hoped it will have when the permanent improvements have been installed. The constant idea has been to make the colony, at least temporarily, habitable in the shortest possible time for the total number of lepers in the islands, so that the opportunities for contracting the disease may be reduced to the smallest limits, and the drain on the resources of the islands decreased as soon as possible. This plan also has the advantage of keeping the bureau informed as to approximately how many lepers will have to be cared for at Culion for many years to come, and thereby makes it possible to regulate the extent and character of the permanent improvements to be made.

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The bureau of health has not only provided all the medical care and attendance required, but has carried on the construction work as well. Even construction work in the Philippines under the direct charge of the technical bureau of the government created for that purpose is attended with many difficulties, such as lack of labor, skilled superintendence, difficulty of obtaining supplies, torrential rains, and many other obstacles; but it sinks into insignificance when compared with construction work on a leper island, that has a steamer call only about once a month, and where labor goes with fear and trembling, often deserting in a body, and where trained superintendence is scarcely obtainable. It is for this reason that particular credit is due to the medical and other officers connected with the bureau of health for the results which have been obtained. The construction work done at Culion will compare favorably in character and cost with that done elsewhere.

A reinforced concrete warehouse has been completed and an 100-bed hospital of the same material is now in course of construction. The work on the hospital is being delayed by the difficulty in obtaining laborers on account of their fear and dread of the disease. So far it has not been found practicable to have the lepers do work other than that entailed by their own domestic requirements. This course has been adopted in deference to their physical condition, and in respect to their innate disposition to take life easy, which, after all, is not a bad thing in lepers.

The mortality at the colony still remains high, but it is believed that it is materially lower than it would have been among these same people in their homes, as many of them were beggars and wholly dependent on public charity for their living. The great majority of cases were so far advanced when they were received into the colony as to render them beyond human aid; those who arrived in a reasonably fair condition have gained in weight and strength and are apparently happier, healthier, and better satisfied than they were in their native provinces. The work of the hospital staff has been exceedingly trying and disgusting, owing to the prevalence of gangrenous ulcers among the new arrivals, the treatment of a single patient often requiring more time than a major surgical operation. As soon as the hospital now in process of construction is completed the question of treatment will be greatly simplified by the increased facilities and more favorable conditions.

X-RAY TREATMENT OF LEPROSY.

During the fiscal year treatment of lepers in the San Lazaro Hospital with the X-ray has been continued. The results in 30 selected cases were as follows: Apparently cured, 1; markedly improved, 5; improved, 7; died, 2; the foregoing 30 cases included the 29 persons who were mentioned as being under treatment in the last annual report. One of these died of chronic amœbic dysentery, and the other from puerperal infection, both of which are causes that are apparently in no way connected or capable of being ascribed to the X-ray treatment.

Last year the cases under treatment were reported as follows: Markedly improved, 8; considerably improved, 13; no change, 7; died, 1 (lobar pneumonia). One of the markedly improved cases is now apparently cured. Microscopical specimens taken from regions which heretofore have invariably shown lepræ bacilli were found negative during the month of June. The following is a history of the case:

Personal history.—Name, Leon Liuanag; male; age, 20; not married; nationality, Filipino; birthplace, Bocaue, Bulacan; laborer; uses tobacco moderately; uses no alcohol; good habits; present residence, No. 28 Calle Alejandro VI, Sampaloc, Manila; entered the San Lazaro Hospital August 12, 1906.

Family history.—Parents alive; father in provinces, suspected of having leprosy; mother well; has one brother, alive and healthy; no sisters; relatives, negative.

Past history.—No previous diseases of importance; venereal history, negative.

Present history.—Two years ago he noticed a swelling on the upper lobe of right ear. This swelling was reddish in color, not itchy nor painful. He treated it with family remedies, but it continued to grow worse, spreading all over the ear. Says that three months after the first lesion appeared on his right ear, noticed also a macular lesion on his lower lip, reddish in color, not anesthetic, not itchy nor painful, which continued to grow slowly. He made

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no attempt to treat this second lesion. Says that he had no other symptoms since the appearance of the disease.

Physical examination.—1. General: Development and nourishment, fair; reflexes, negative; glands, negative; genitals, normal.

2. Head: Scalp, normal; eyes, negative; above left eyebrow there is a small, round tubercle, reddish in color, but not anesthetic, not itchy nor painful; nose, the tip shows a reddening and it is shiny in appearance, and the alaenasi are infiltrated; mouth, the border of the lower lip shows from the middle portion to the right angle, a macular lesion, red in color, not anesthetic, not itchy nor painful, but with slight infiltration, and measures 2 centimeters long and 6 millimeters wide; ears, left normal and about 4 centimeters in length; the right ear is hypertrophied and measures 7.5 centimeters in length and 4 centimeters in width; reddish-brown in color, and its lobules show some breaking down of the tissues with some suppuration; rest of the face, normal; neck, normal.

3. Chest: Skin, normal except that the back shows several round white spots which are somewhat anesthetic; development and expansion, good; heart, normal; lungs, normal.

4. Abdomen: Skin, normal; organs, normal.

5. Extremities: All are normal.

Microscopical examination.—Examination of blood from the affected parts shows the bacillus lepræ.

Present condition.—Ears are now normal in size; infiltrations about nose and lip have disappeared; no anesthetic areas; white spots on back remain; is apparently healthy and normal; condition of patient before and after treatment is well shown by photographs on succeeding pages.[a]

From the foregoing it will be noted that a period of one year and six months elapsed from the time the treatment was begun until an apparent cure was effected.

The remaining 7 formerly reported as very markedly improved showed still further improvement. Of the 13 formerly reported as considerably improved, one left the institution and the remainder show no further improvement. The 7 reported last year as unchanged by the treatment show slight improvement. Of the two new cases placed under treatment during January and April, neither one has as yet shown any improvement. The disease, however, has not progressed.

The net result is that one person has been apparently cured; 3 others show practically no signs of the disease, but are positive microscopically; in 7 others the tubercles and infiltrations have been much reduced in size and the remainder present about the same appearance as when they were first placed under treatment, which shows that the progress of the disease was arrested, which is a most important matter.

CONCLUSION.

The foregoing results are far from satisfactory, yet they are believed to be far superior to those which have been obtained by any other form of treatment of which this office has any reliable record; at the same time, some hope of relief is held out to the unfortunate sufferers from this disease.

MALARIA.

Malaria continues to figure in the causes of death to a greater degree than it should. The number of deaths for the period covered by this report is 164 (including those reported as malaria cachexia), as against 173 for last year.

The true conception of the nature of the disease and the manner of contracting it is gaining ground, especially among the younger generation now attending the public schools. Older persons learn of the bad habits of mosquitoes through the school children, and more and more assume an unfriendly attitude against this pest with whom they have lived on terms of "live and let live" relationship all their days. The use of mosquito nets is becoming quite general. In a number of instances complaints have been received that they were not being furnished in public institutions. Owing to the continuous high temperature throughout the year, the practice of screening doors, windows, and other openings of houses has not been practicable because it shuts off the air currents which are absolutely essential in this climate in order to enjoy reasonable comfort; so that mosquito nets must be depended upon for the present, and later proper drainage introduced, in order that the breeding of mosquitoes may be impossible.

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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The success which was had in preventing this disease at the Iwahig penal colony on the island of Palawan has continued. It will perhaps be remembered that one of the most pernicious forms of malarial fever in the Philippines was present in that section, and the efforts made by the Spaniards to found a colony resulted in complete failure. The method first employed was the prophylactic use of large doses of quinine. Drainage work was at once started, and this has now been completed far enough as to cause almost the entire disappearance of mosquitoes. Cases of malarial fever that originate in the city of Manila are still very rare, as is also the anopheles mosquito.

The entomologist of the Bureau of Science has discovered the mosquito "Myzomyia Ludlowii" Theobald, breeding in salt water at Olongapo and near Manila, and by experiment proved it to be capable of transmitting malaria. He has published his results in the Philippine Journal of Science, section B, volume 2, page 513.

It is believed that this mosquito has been responsible for the large number of malaria cases occurring among the United States marines and sailors that were stationed near Olongapo.

MEASLES.

An extensive inquiry made among physicians who have been practicing in the Philippines for more than twenty years reveals the fact that measles have been extremely common among the Filipinos, and that they have not been as immune as was heretofore thought to have been the case. The disease among Filipinos, however, is extremely benign, rarely ever resulting in death, and seldom leaving any bad sequelæ.

An extensive outbreak of measles occurred among the pupils attending the American school, and there was almost positive evidence that it was brought in by children who arrived by transport from the United States. On account of the fact that measles in the United States is a much more serious disease than in the Philippine Islands, it was deemed advisable to take precautions to prevent any new infection being introduced. For this reason the American school was closed and disinfected, as were also the houses from which infected cases came.

Measles are continually being introduced into the Philippine Islands by the troops. It is perhaps worthy of note to mention that scarcely one organization that has traveled as a regiment has arrived here in the past seven years from the United States without measles having made its appearance among the troops during the trip.

THE OPIUM HABIT.

On March 8, 1906, the Philippine Commission, after carefully considering the report of a special opium committee, which, during the greater part of the years 1904 and 1905, was engaged in studying and collecting data on the subject at close range in those oriental countries in which the habit is prevalent, passed a law for the purpose of restricting the sale and suppressing the evil resulting from the sale and use of opium until March 1, 1908, after which time its importation or use for any but medicinal purposes was forbidden by act of Congress.

This law defined the term "opium" so as to embrace every kind, class, and character of the drug, whether ground, prepared, or refuse, and all narcotic preparations thereof, or therefrom, and all morphine, or alkaloids of opium, and preparations in which it enters as ingredient, together with all opium leaves, whether such leaves or wrappers are prepared for use or not; and provided that it should be unlawful to sell, transfer, give, or deliver opium in any of its forms to any person other than a duly licensed physician, wholesale dealer, or retail dealer in it, or to a duly registered confirmed Chinese user of the drug, upon the presentation of his certificate. The reservation was made that opium in any of its forms might be sold, transferred, or delivered to scientific bureaus of the government and to hospitals upon the permission of the collector of internal revenue, and also that duly licensed physicians might prescribe and administer it as a medicine, and pharmacists and second-class pharmacists might sell, transfer, give, or deliver the drug as a medicinal preparation on the prescription of a duly licensed and practicing physician under such regulations as might be prescribed by the collector of internal revenue and approved by the head of the proper department.

The definition of opium was subsequently modified by the governor-general of the Philippine Islands, upon the recommendation of the collector of internal

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revenue, so as to exclude preparations containing less than 2 grains to the ounce of the drug, in restricted quantities, and subject to the presentation of satisfactory evidence that the same was to be used for medicinal purposes only. It is estimated that of the habitués registered in accordance with legal requirements the greater part continued to use the drug, but during the operation of this first law the habit was almost entirely restricted to those who had already acquired the same. This office has no record of any new beginners.

For some time previous to the expiration of the time limit imposed by the Congress of the United States certain unscrupulous persons, probably through an organized corps of instructors, began to teach systematically the use of cocaine to the opium habitués, and for a long time it appeared as if one bad habit might be supplanted by another of greater danger. The movement gained such headway that additional legislation became necessary to prevent the introduction among the people of the cocaine habit. The Philippine Legislature on October 10, 1907, repealed the first opium act, No. 1461, and replaced it by another, No. 1761, which included cocaine, and also provided that on and after March 1, 1908, it should be unlawful for any person to hold or to have in his possession, or under his control, or subject to his disposition, any opium, cocaine, alpha or beta eucaine, or any derivative or preparation of such drugs or substances. It was provided that government bureaus or officers of the government and practicing physicians should be exempt, under proper legal restrictions, from the operation of the law. Since March 1 last the use of opium and cocaine in the Philippine Islands has been officially forbidden except when used for medical purposes under guarded legal restrictions. For instance, it is held to be illegal for anyone to import opium or cocaine into the islands, this function being vested solely in the government, which sells these drugs only to such persons as are clearly entitled to have them.

The possession of any opium pipe, hypodermic syringe, apparatus, instrument, or paraphernalia for the use of smoking opium, or hypodermic syringe for the use of cocaine, alpha or beta eucaine, or any derivative or preparation of such drugs or substances, or any other apparatus or instrument especially designed for using any of the said drugs or substances, in or on the human body, shall be deemed prima facie evidence that the person in possession of such pipe, hypodermic syringe, apparatus, instrument, paraphernalia, or articles has used some one of such prohibited drugs or substances, or the drug or substance for the use of which such apparatus, instrument, and paraphernalia are especially designed, without the prescription of a duly licensed and practicing physician, unless such prescription is produced by such person.

As would naturally be expected, the first day of March, 1908, was a "black" Sunday for opium habitués. When the truth and seriousness of the situation dawned on the unfortunate sufferers who had sinned away their two years of grace, the conditions were deplorable. The action of the victims in the face of the government's determination to save them by legal force would truly characterize them as fiends. The term "fiend" is used very liberally by the laity, but such stigmatization is not appropriate until a victim is deprived of the drug to which he has become a slave. In sheer desperation the sufferers sought hospital treatment, which the government had generously provided. The rush was so great and the task so severe that the San Juan de Dios Hospital, which had previously held the contract, asked to be released on the ground that it did not possess proper facilities for the accommodation and restraint of so large a number of frenzied patients. In order to meet the emergency, several wards of the new insane department of San Lazaro Hospital were made ready for the reception of the opium patients, and the San Juan de Dios Hospital released. In the new quarters they fought, screamed, threatened, and sulked, until they realized that the government meant business, when they quietly submitted to treatment by the humane reduction method, administration of nutritious food and the stimulus of moral encouragement, and were cured. The Chinese consul-general of the Philippine Islands and the Chinese Chamber of Commerce rendered valuable aid in dealing with their people.

The Rev. Mr. Studley, missionary of the Protestant Episcopal Church of America, at great risk to his personal safety and absolute destruction of his personal comfort, took up his residence with these people and worked as a hospital attendant, and more credit than the director of health can give him in a report of this character is his due. His work was not confined to Manila, but he went to Cebu when the bureau of health established a hospital there, and labored incessantly for a number of weeks. The combined efforts of the provincial board, the district health officer, and the Rev. Mr. Studley, however,

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could not overcome the indifference and opposition of the persons affected in that province, whereupon the hospital was closed May 27, after running forty-two days.

The contract with the Mission Hospital at Iloilo was continued during the year on a very satisfactory basis. To this and to all other government hospitals treating the opium habit transportation is provided the patients free of charge, so that the benefits of instructional treatment, restraint, and encouragement may be available for all. The selection of a hospital is determined on a basis of transportation facilities and traveling expenses.

Experience has demonstrated that the opium habit is not a particularly difficult matter to treat, especially among the smokers. Those who used the drug by mouth experienced more inconvenience, and those who were in the habit of using it hypodermically suffered considerably. The method employed by this bureau is that known as the "reduction method." When the contract was held by the San Juan de Dios Hospital considerable trouble was experienced through the zealous efforts of friends, and the mercenary motives of others, surreptitiously to supply the patients with opium products. This trouble was also encountered to some extent after the patients were transferred to San Lazaro, and until it was completely removed the question of a cure was beyond the range of possibility. Just how many relapsed after being discharged from the hospital is, of course, not known; but it is noteworthy that a great many of the habitués expressed themselves as being extremely grateful that they had been cured, and that they would not again permit themselves to become victims. In Manila no cases of relapse have come under observation, but in Cebu the persons treated did not take kindly to the efforts that were made to redeem them, and many are known to have relapsed promptly. During the past few months the treatment of these cases at Manila has apparently yielded excellent results. This is largely due to the hearty cooperation which was extended by the friends of the victims. At Cebu this cooperation was not forthcoming; the victims themselves were opposed to being cured, and almost a complete failure has been the result. The users at Cebu are now being vigorously prosecuted and severe penalties imposed. Such cases, of course, come under compulsory treatment in the hospital of the prison, and it will be interesting to observe the outcome. The following table shows the total number treated, the result of the treatment, and the name and place of the hospital at which treatment was given:

Place and nationality.	Admitted during year.	Recovered.	Improved.	Not improved.	Remaining close of year.
San Lazaro:					
Filipinos	17	14	3	.....	3
Chinese	383	365	18	.....	18
Others	1	1	.....	.....	.....
Total	401	380	21	.....	21
San Juan de Dios:					
Chinese	223	63	[a] 2	.....	158
Filipinos	36	34	.....	.....	2
Others	.....	.....	.....	.....	.....
Total	259	97	2	.....	[b] 160
Mission Iloilo:					
Chinese	3	3	3	.....	.....
Filipinos	.....	.....	.....	.....	.....
Others	.....	.....	.....	.....	.....
Total	3	3	3	.....	.....
Cebu:					
Chinese	27	27	.....	.....	.....
Filipinos	37	37	.....	.....	.....
Others	1	1	.....	.....	.....
Total	65	[c] 65	.....	.....	.....
Total	725	542	26	.....	181

[a] Escaped, 1; discharged as improved, 1.
[b] Transferred to San Lazaro Hospital for treatment.
[c] Relapsed after leaving hospital.

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The bureau of health has recently imported shoots of the plant Combretum sundaicum, which has gained so great a reputation in the treatment of the opium habit in India, and in a short time will be in a position to give the remedy a thorough test. The importation of this plant was made not because the "reduction treatment" was unsatisfactory, but with the hope that it might prove less severe, and also for the purpose of studying its pathological and therapeutical effects. The reputation of the remedy rests almost entirely upon empiricism.

PARAGONIMUS WESTERMANII INFECTION.

In the report for last year attention was called to the fact that 17 cases of paragonimus westermanii had been found in Bilibid prison. Eight of these were fatal, the diagnoses having been made at autopsy. The figures for the past year are 14 cases and no deaths. This year as well as last, in several cases it was ascertained that trematodes were not confined to the lungs, as they were found in the various organs of the body and particularly in the brain. It is practically certain that many cases which were diagnosed as tuberculosis were really fluke infections.

PLAGUE.

The Philippine Islands have been entirely free of plague originating locally since April 20, 1906, but the director of health has maintained a strict vigilance, exercised chiefly through the United States Public Health and Marine-Hospital Service, against the disease.

On July 23, 1907, the steamship *Ferd Laeisz* arrived in Manila from Hongkong and other Chinese ports. At the examination made by the quarantine inspection a case suspicious of plague was found. This was transferred to the San Lazaro Hospital where the diagnosis was confirmed bacteriologically. The vessel was remanded to the Mariveles quarantine station for treatment and detention. There was no further spread of the disease.

Up to the present time there has been no exception to the remarkable regularity of the time of the year in which plague develops in Hongkong, Amoy, and other Chinese ports. During the month of May the disease makes its appearance, the fastigium being reached during June or July, after which it gradually declines until November is reached, when there is usually a complete disappearance of the disease. So far no satisfactory explanation has been offered for this phenomenon.

On June 9, 1908, the following circular was issued for the guidance of quarantine officers throughout the Philippines:

TREASURY DEPARTMENT,
U. S. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
Manila, P. I., June 9, 1908.

THE MEDICAL OFFICER IN COMMAND,
U. S. Public Health and Marine-Hospital Service.

SIR: In view of the large number of plague cases reported at Hongkong, Canton, and other oriental ports in close communication with the Philippine Islands, the conclusions of the Indian plague commission, which has made a comprehensive study of this disease, and has issued the same in a complete volume, are of particular significance, and it is desired that the officers of this service stationed in the Philippines who deal with vessels arriving from plague-infected ports, be guided by its conclusions, which are as follows:

"1. Pneumonic plague is highly contagious, but it is rare (less than 3 per cent of all cases) and plays a very small part in the spread of the disease.

"2. Bubonic plague. Man is entirely dependent upon the disease in the rat.

"3. The infection is conveyed from rat to rat, and from rat to man solely by the rat flea.

"4. A case of bubonic plague in man is not in itself infectious.

"5. A large majority of cases of plague occur singly in houses. When more than one case occurs in a house, the attacks are generally nearly simultaneous.

"6. Plague is generally conveyed from place to place by imported rat fleas which are carried by people on their person, or in baggage. The human agent not infrequently himself escapes infection.

"7. Insanitary conditions have no relation to the occurrence of plague, except in so far as they favor infection by rats.

"8. The nonepidemic season is bridged over by acute plague in the rat accompanied by a few cases in man."

VICTOR G. HEISER,
Chief Quarantine Officer of the Philippine Islands.

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Vessels arriving from plague-infected ports are fumigated for the destruction of rats and vermin. There is no hypothesis other than that of constant watchfulness that will explain why the Philippine Islands should be free from plague when an active commercial intercourse is maintained with near-by infected ports.

The following editorial comment, extracted from an article published in the Boston Transcript, is cited as representative of the comments of the press of the United States on the plague situation in the Philippine Islands:

"A PLAGUE LAND NO LONGER.

"One of the notable successes of American administration in the Philippines is that won by the skillful and devoted physicians of the Public Health and Marine-Hospital Service, who have charge of the sanitation of the archipelago. In a few years they have completely transformed the sinister reputation of Manila and the other Philippine cities, and have made considerable progress toward teaching the inhabitants of the remoter provinces how to live and to defy the pestilences which, descending from the Asiatic mainland, have periodically swept like devastating fire through the Filipino towns and villages.

"The Spaniards were as notoriously unable to cope with disease in the Philippines as they were in Cuba. Up to the year of American occupation Manila was one of the worst plague spots in the East, and the average rate of mortality among the natives and the foreign residents was entirely suppressed or inadequately stated, it was so appalling. When the first American soldiers sailed across the Pacific one of our Boston newspapers violently opposed to the national administration, distinguished itself by the jubilant prophecy, often and exultantly repeated, that they would all be dead before the year had ended, and that the American Government could never keep an army in the Philippines without resorting to forcible conscription!

"How half-crazy, half-ludicrous this prediction now appears in the face of the report of Doctor Heiser, director of health, that the death rate among the Americans in Manila in the quarter ended March 31, 1907, was only 5.4 per thousand. Nor are our civilian and soldier countrymen the only beneficiaries of the vigilant and forceful American system of sanitation. The death rate for the entire population of Manila—Filipinos, Chinese, Europeans, all included—was only 28.48 per thousand, which is a remarkably low figure for the Orient. The record steadily improves with the increasing grip of the American sanitary authorities on this peculiarly difficult situation. Thus, there has not been one case of the plague in the Philippines since April 20, 1906."

SMALLPOX.

More cases of smallpox came under observation than during the preceding fiscal year, yet at no time did the disease become epidemic, which was in striking contrast to the conditions that have prevailed in the near-by countries. In some of the large cities of Japan, for instance, as many as a thousand cases per week occurred, while in Manila not more than a few cases per day were reported.

The disease was found mostly among recent arrivals from the provinces who had not been properly vaccinated. The reappearance of the disease in many towns of the provinces was apparently due to two causes; first, the undoubted lowered potency of the vaccine during certain periods of the year, and second, to the negligence of the municipal officials in not vaccinating the new-born children, and other unvaccinated individuals who had come into the province after the systematic vaccination of the same was completed. Experience has shown conclusively that the islands are literally saturated with the infection of smallpox, and wherever there is an individual who is not protected by a previous attack, or by a successful vaccination, the disease soon seeks him out and he becomes one of its victims.

Another difficulty is that as the vaccinators continue their work they are ever going more and more into remote places where it is most difficult to supply them with vaccine in a potent state.

At Bilibid prison the disease made its appearance a number of times. In view of the fact that every prisoner is vaccinated upon entering the prison, at first sight it would seem that smallpox in this institution should cause considerable doubt upon the efficacy of vaccination. But upon examining the

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afflicted individuals it was found that in nearly every instance the pockmarks of previous attacks were revealed, thus showing that they were unusually acceptable individuals whom even a previous attack did not protect.

The principal feature of surprise in the recent smallpox outbreaks was its virulence. Ordinarily the mortality for this disease among Filipinos is about 5 per cent, never above 10, but in the outbreak of this year it ranged from 25 to 50 per cent. The disease was almost entirely confined to the non-vaccinated. Notwithstanding the repeated warnings given through the press and by circulars, many persons, especially the Americans, failed to be vaccinated. The probability of an outbreak among the unprotected towns at the close of the dry season was made the subject of special notices of warning, but required the presence of an epidemic to arouse the people to action. As soon as the disease assumed noticeable proportions, the health stations were besieged by applicants for vaccination.

SPRUE.

Sprue is a most uncommon disease in the Philippine Islands. Only two cases have come under observation. So far as is known, it is not a communicable disease, nor does it occur in epidemic form, and is, therefore, of no great importance to the sanitarian of the Philippines.

HUMAN TRYPANOSOMIASIS—SLEEPING SICKNESS.

On a trip made during February for the purpose of collecting the lepers assembled at Albay from the province of Albay, a blood specimen was taken from one of the persons who had been sent in as a leper suspect, and the slide being negative for lepra bacilli, the patient was released. This slide was taken to the laboratory in Manila, but unfortunately in the interim the identification marks became obliterated, and it could not be definitely ascertained from whom the specimen was taken. The specimen in question was made by Mr. F. H. Willyoung, of the bureau of science, and on being examined at the laboratory was found to contain trypanosomes, which were identified as being trypanosomii gambiensi. A further effort was made to locate the person from whom this slide was taken, Mr. Willyoung making a special trip to the province of Albay for this purpose. He succeeded in finding all of the individuals who had been previously examined as leper suspects with the exception of one person, a resident of the town of Camiling, who had died in the meantime, but he did not succeed in finding any further evidence of trypanosomes among the residents of that section. It is not known whether the person who died was the one from whom the trypanosomes were obtained or not.

During the closing days of the year another case which resembled sleeping sickness was reported in a person who is said to be a native of Camiling, Albay. Arrangements are now being made for a member of the staff of the bureau of science to go to Albay for the purpose of investigating this matter.

TUBERCULOSIS.

With the exception of the tuberculosis hospital for prisoners afflicted with this disease, there is a not a hospital in the Philippines entirely devoted to the treatment of such cases, yet this country is not far behind in the procession of crusaders against the great white peril.

The city of Manila has stringent ordinances against expectorating on sidewalks and in public places, but they have not been rigidly enforced, because it was deemed expedient as a matter of public policy to approach the problem at first in an educational way and to give people an opportunity to familiarize themselves with the sanitary requirements.

The statistical tables will show the number who have succumbed to the disease in Manila during the fiscal year.[a] The total is slightly less than it was last year. The Manila statistics are fairly suggestive of the ratio throughout the provinces. The 1,167 deaths from tuberculosis in Manila represents 13 per cent of the total number of deaths for the city, or a death rate of 5.04 per 1,000 of the population. No reliable figures have been received from the provinces, but as stated before the conditions may be judged from the Manila statistics.

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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Tuberculosis has long been regarded by the public as a necessarily fatal disease, and it is very difficult to convince those afflicted with it that it often yields to the simplest hygienic measures; the people want a sign before they will believe. Formerly it was the practice to recommend a change of climate, but experience has amply demonstrated that the treatment is more dependent on proper nutrition than on meteorological conditions. Thousands of patients who have died in despair because they could not avail themselves of the benefits of climatic change might have been cured at their own homes. The requisites everywhere in the treatment of tuberculosis are: Open air, abundance of nourishing food, and close medical supervision.

Sanitaria results with this treatment have often been as successful in New England as in Colorado and California. It is not the purpose of these comments to underrate the value of favorable climatic conditions in the treatment of this or any other disease, but the benefits are oftentimes more than offset by the inconveniences of travel, loneliness and homesickness, and the necessary status of patients among strangers.

There is no specific medical treatment of tuberculosis. It is purely a question of combating the germs by the natural powers of bodily resistance, encouraged and stimulated by those agencies which favorably affect metabolism. Proper hygiene and diet, the attention to the little things peculiar to each individual case, together with appropriate medication for special conditions as they arise, can be best supervised in a sanitarium; hence such treatment has been the most successful.

No disease makes such a drain on the resources of families, for its long insidious course prevents its unfortunate victims from earning their living, thus oftentimes enforcing a condition of debt and actual want. In such cases the government should take up the burden, and the time is not far distant when an appeal must be made for funds to erect government sanitaria.

The insurance companies of Germany during the last two years have spent $1,000,000 for the erection and maintenance of sanitaria in which to treat tubercular policy holders. If these companies find it worth while to prolong the lives of their policy holders, is it not worth while for the state to throw out the life line to its suffering citizens?

The actual loss in the wage-earning capacity of an affected individual can be easily computed, as may also the expenses incurred, but the potential loss to the community at large can not be estimated. The aggregate is stupendous. If the great misery, humiliation, suffering, and despair of stricken victims, of the relatives and friends and those dependent upon them, be ignored altogether, and the question considered from its financial aspect alone, it would be a matter of wise public policy to relieve, in part, at least, this drain on the productive capacity of the country, which is measured in millions every year.

A large percentage of all cases of incipient tuberculosis is curable, hence a government sanitarium should be limited to patients in the early stages of the disease. Every case in the advanced stage would exclude a case that could be cured. It will be at once seen that if patients are taken in to die, the institution would soon be looked upon as a place of final resort, and the educational factor in its purpose entirely lost sight of by the public.

One of the principal objects of a sanitarium is to educate the people. The influence exerted by those that are cured is the greatest power in the educational crusade against this disease. In the United States, it has been found that the average duration of treatment is about 6 months. An institution with a capacity of 100 patients, that is, 200 a year, ought to send back to the people at least 160 (80 per cent) missionaries to preach hope and health to their countrymen. The people must realize the nature of this disease; that it is communicable and preventable; that taken in time and properly treated it is curable. One enthusiastic patient returned cured is worth more among these people than all the circulars and literature that could be produced on the subject. The bureau of health has records of cures in the provinces as well as in the local hospitals, of cases which appeared hopeless. Some of the provincial cases were treated along the lines suggested in the bulletin on this disease issued by this bureau, without the aid of a physician.

When the finances of the country will permit, compulsory hospitalization for consumptives in the advanced stages may be advisable, but the educational side of the question is of the most importance at this time.

The government will appoint delegates to the coming International Congress of Tuberculosis to be held at Washington City.

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In connection with this subject, it may be interesting to quote the preliminary report of the Philippine committee representing the International Association for the Study and Prevention of Tuberculosis:

MANILA, P. I., *March 21, 1908.*

DR. JOHN S. FULTON,
Secretary General, National Association for the Study and Prevention of Tuberculosis, 810 Colorado Building, Washington, D. C.

MY DEAR DOCTOR FULTON: Your letters of September 13, 1907, were duly received, appointing Doctors Heiser, Strong, and Marshall the committee representing the National Association for the Study and Prevention of Tuberculosis for the Philippine Islands.

The committee has been working as much as opportunity allowed to prepare the way for the fight against tuberculosis in the Philippine Islands. As yet there is very little reliable data as to the extent to which tuberculosis prevails here, and there is no centralized effort to combat the disease. So far it has not been feasible to institute an organized campaign against tuberculosis on account of the magnitude of the work at present in progress directed to the extermination of smallpox, leprosy, cholera, beriberi, and other infectious diseases from these islands, and the establishment of a suitable condition of public and household sanitation. We are, however, gathering information in regard to tuberculosis and are gradually arousing the medical profession to a realization of the importance of this subject and to the need of concerted action.

The death certificates of the bureau of health indicate that tuberculosis is a common disease among the native Filipinos, and that it is frequently encountered in the state prison. The careful routine autopsies recently inaugurated at the Philippine Medical School already throw considerable light upon the subject. In the first 100 autopsies, tuberculosis was the cause of death in 34 cases; was present as a subacute or latent lesion in 11 cases; and was present as a healed focus in 9 cases. The only morbid conditions which revealed a like frequency were amoebic ulceration, which was found 54 times, and the intestinal parasites which were present in practically every case; while next in importance came pneumonia, which was the cause of 23 deaths. The figures speak for themselves and comment is unnecessary.

The only institution for tuberculosis patients in the Philippines is a hospital conducted by the bureau of health for the isolation of tuberculosis prisoners from the state prison, and yet the need of suitable institutions is indicated by the statistics given above, while the habits of the natives, their generally poor state of nutrition and the crowded condition of their homes all furnish conditions favorable to the spread of the disease.

As we have remarked, no systematic campaign has yet been definitely launched against tuberculosis in the Philippines, but a general survey of the field inclines your committee to believe that this disease is closely associated with other preventable diseases of the islands, and that the campaign must begin with a concerted effort on the part of the medical societies and with education of the ignorant Filipino tao or peasant in the elementary laws of hygiene. We may be able to attack this problem in Manila through the agency of the bureau of health dispensaries, which are scattered through the native sections and which would make excellent centers for a house to house campaign.

There is little hope of our being able to institute a campaign in the regions outside of Manila until we have proved successful locally, but we hope eventually to meet this condition through the Philippine Medical School which is engaged in instructing native men and women who have received a high school education, and who, when they graduate in medicine, will spread through the outlying districts of the Philippines and diffuse their knowledge in regions now entirely devoid of medical attention.

Recent investigations have shown that intestinal parasites are even more frequent among the Filipinos than among the Porto Ricans. At the last annual meeting of the Philippine Islands Medical Association a resolution was adopted requesting the governor-general to appoint a committee for the purpose of attacking the problem of the disposal of feces with a view to diminishing the presence of intestinal parasites.

At the same meeting, upon motion of your committee, the president was instructed to appoint a committee representing the Philippine Islands Medical Association to cooperate with your committee in the struggle against tuber-

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culosis. We hope that these two tuberculosis committees will be able to cooperate with the governor-general's committee and to use the information acquired in launching an antituberculosis campaign.

Very truly, yours,

VICTOR G. HEISER,
RICHARD P. STRONG,
HARRY T. MARSHALL.

TYPHOID FEVER.

The mortality statistics for the city of Manila show that there have been 84 deaths from typhoid fever as against 66 deaths during the previous fiscal year. Very few of the deaths were verified by autopsy, and it is believed that some of the diagnoses are open to doubt; however, the number of cases seems to increase from year to year. The cause for this was fully discussed in last year's report.

Statistics from the provinces are not available, but it is not thought that the disease has been very prevalent. The Manila cases have, for the greater part, been imported. The real immunity from this disease in the past has probably been due to the comparative small number of flies and to their facilities for obtaining food in Filipino homes without any necessity of visiting the remote portions of the premises. The completion of the new water system will lessen the danger, and probably enable the health authorities to keep the disease from ever becoming epidemic.

YAWS.

This disease was encountered during the year at a number of different places throughout the archipelago. It was observed among some lepers that were being transferred from the province of Albay to Culion. Shortly after they arrived it was discovered among other lepers who were at Culion before those from Albay had come, thus showing almost conclusively that the disease is communicable. At the San Lazaro Hospital (leper ward) some further spread also took place, apparently from the cases which were reported last year. These cases received no treatment except a local application of an ointment of boric acid, while some patients applying to the outpatient dispensary of the bureau of health were treated with mercury and the iodides. No difference could be observed in the time of convalescence of the treated and untreated cases.

No deaths from this disease have been reported.

AN UNDETERMINED DISEASE.

On January 4 a case was encountered in the city of Manila which occasioned this bureau considerable anxiety. In the district of Santa Cruz a Filipino, aged 18, an employee in an umbrella and hat factory, took ill suddenly on the morning of January 3. He complained of severe pains in the chest, but no vomiting or diarrhea were present. No reliable data could be obtained, but from the best information that could be had, it appeared that he had no fever. On the morning of January 4 he died, at which time the case first came to the notice of this bureau. The body was sent to the San Lazaro morgue as a cholera suspect, but, upon autopsy, findings common to a severe form of septicæmic poisoning were encountered, with extensive hemorrhages throughout the lungs and upon the serous surfaces of the heart. Slight enlargement of the spleen and considerable free fluid in the abdominal cavity were found. The intestines showed slight signs of enteritis, but no special pathological changes were noted. The mesentery glands were considerably enlarged and exuded serum freely upon section. A similar condition likewise obtained in the lymphatic glands of the chest. Smear preparations were made from the glands of the chest and stained in the usual way for plague bacilli, and typical bipolar organisms were found. A number of experienced microscopists examined the specimens, and all were unanimously of the opinion that the organisms closely resembled those of plague. Cultures were likewise made of the intestinal contents. The pathological findings so closely resembled those of plague that the bureau of health deemed it necessary at once to inaugurate all the modern methods for combating this disease. The house in which the case occurred was thoroughly disinfected and later treated with petroleum. All textiles were soaked in bichloride, while rat bane and rat traps were placed

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about the premises, and a general campaign of rat catching was commenced throughout the entire city for the purpose of ascertaining whether the rats of Manila were plague infected. A careful investigation was then made of this case from a clinical and epidemiological standpoint, with the result that indicated as closely as an investigation of this kind can that the case was likely not plague. In the meantime the laboratory investigation was continued, and within a period of forty-eight hours cultures which had been obtained from the glands grew with typical spore formation, showing almost conclusively that they were not plague bacilli, particularly because the latter do not produce spores, and more time is required for cultures to grow. The diagnosis was still further clarified by almost pure cultures of cholera vibrio being obtained from the specimens taken from the intestines. Inoculations into guinea pigs also failed to produce plague.

CEMETERIES.

The amount of work thrown upon this office during the year in connection with the enforcement of Act No. 1458, which has for its object the regulation of the cemeteries throughout the islands, has been very heavy. It is quite probable that an equal amount of time devoted to some other branch of sanitary work would have yielded much better results.

The experience of the past two years has clearly demonstrated that in the majority of the cemeteries it has been customary to inter human remains in the same place which has been utilized for a similar purpose a few months or years previously. No records seem to have been kept as to the exact location of bodies, and it has not been an infrequent experience that the mourners who accompanied the dead to the burial ground had to witness the uncovering of remains that were buried at an earlier date.

The records of the total number of interments in some cemeteries showed that at least five or more bodies had been buried in one grave. Steps have been taken to remedy this condition by having the rules which are given below enacted into municipal ordinances throughout the islands, and by closing the cemeteries which were overburied. This latter action has given rise to considerable friction in some provinces; but with the exception of a few isolated instances, the owners of cemeteries are now complying with the law.

During the year definite action was taken upon 548 cemeteries. There were ordered closed 210, and 198 sites for new cemeteries were approved. Eight new sites were disapproved for cemetery purposes, on account of not conforming to the law; 128 cemeteries already in existence were authorized for continued use; 3 were enlarged and 1 was reopened. Since the law became operative, 909 cemeteries have been acted upon, and it is estimated that there are still 621 that have not been reached. From the foregoing it will be apparent that over one-half have been acted upon.

In view of the fact that a routine procedure has now been definitely established, it is hoped that this work will be nearly finished before the end of the next fiscal year.

CEMETERY RULES AND REGULATIONS.

All cemeteries now existing or hereafter established must conform to the requirements of Act of the Philippine Commission No. 1458, and be governed by the following regulations:

General.—1. Cemeteries shall be traversed by a main road 2 meters wide, from the main entrance to the opposite side, and, beginning at the main entrance, at a distance of every 30 meters, this main road shall be intersected at right angles by paths at least 1 meter in width traversing the cemetery from one side to the other.

2. Cemetery sites should be inclosed by a suitable fence sufficiently high and strong to prevent the entrance of animals and provided with a gate or door with a lock.

3. Trees may be planted only in such manner as will not obstruct the area set aside for graves.

4. The cemetery shall be open for interments every day, between the hours of 6 o'clock a. m. and 6 o'clock p. m. Between the hours of 6 p. m. and 6 a. m. the cemetery door or gate shall be closed and locked, and no one shall be permitted to enter cemeteries between these hours except upon authority of the president and municipal council, first obtained.

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Graves.—5. In all general cemeteries graves shall be dug side by side, in a row, and shall be numbered consecutively.

6. Graves shall not be less than 1½ meters deep.

7. The grave for an adult shall occupy not less than 3 square meters of ground, which space shall be utilized as follows:

The grave itself shall be 2 meters long and 85 centimeters in width, and on all sides of same there shall be an unoccupied space 20 centimeters wide. Thus, the entire space allotted for an adult shall not be less than 2.40 meters long and 1.25 meters wide, and the entire area of same shall not be less than 3 square meters.

There shall be an open unoccupied space, 40 centimeters wide between any two adjoining graves.

8. There shall be placed at the head of each grave a marker of wood or other suitable material, which shall bear the number of the grave. These markers shall be of uniform size and shape, and the numbers shall be burned or cut thereon. This marker shall not be constructed as to prohibit the placing of any tombstones.

Disinterments.—9. The disinterments of bodies from cemeteries, and the transfer of bodies from place to place, is strictly prohibited except in accordance with the provisions made therefor in Act No. 1458.

Cemetery Register.—10. Hereafter Municipal Form No. 23, section 3, "The Register of Deaths" shall be called "The Death and Cemetery Register." The municipal secretary shall enter under the column of "Remarks" of the Death and Cemetery Register, the name of the cemetery in which the body has been buried, and the number of the grave which it occupies. Tenientes of barrios, or persons other than the municipal secretary, who are authorized to issue burial permits, shall, when making reports to the municipal secretary of the burial permits issued, also state therein the cemetery in which each body is interred and the number of the grave it occupies, in order that the municipal secretary may make a record of the same in the Register of Deaths and Cemeteries.

11. The municipal secretary shall prepare and keep a plan of all cemeteries of the municipality, upon which shall be indicated a number of spaces equal to the number of graves which may, under the provisions of this ordinance, be dug in each cemetery, and the spaces representing graves, indicated thereon, shall be numbered consecutively, beginning with No. 1. When any grave is occupied by a body, the corresponding space on the plan shall be marked with the word "Occupied."

Care taker.—12. A care taker shall be employed whose duty it shall be to dig graves, to remove all weeds and rubbish from the cemetery, to keep the roads, paths, and decorative trees and plants in good condition constantly; to keep the fence and gate in good repair; to keep grave markers in proper position, and to perform any other labor which may be required to keep the cemetery site and fence in good condition at all times. It shall also be the duty of the care taker to require the owners of monuments or other property in the cemetery to keep the same in good condition.

13. The care taker shall see that each grave is dug at least 1½ meters deep; that graves are dug side by side in a row; that each grave is of the proper length and width and that the free space of 40 centimeters between adjoining graves is strictly observed.

14. The care taker shall be ready to open the gate of the cemetery between the hours of 6 a. m. and 6 p. m. on any day, for the purpose of permitting the interment of bodies. He shall be the custodian of the key of the cemetery. Between the hours of 6 p. m. and 6 a. m. the cemetery gate shall be closed and locked, and no one permitted to enter except by the authority provided for in rule No. 5.

15. The care taker shall not permit the interment of any body in the cemetery unless accompanied by a proper burial permit which shall have been issued within forty-eight hours from the time presented to him, and he shall permit no disinterments to be made unless a proper permit therefor is presented.

Fees.—16. The fee for each burial permit shall be ——— (Act No. 1530 provides that fees for burial permits shall not exceed 50 centavos.)

17. The charge for each grave shall be ———.

18. Any person violating the provisions of this ordinance, or any part thereof, shall, upon conviction, be punished by a fine not to exceed 200 pesos, or by

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imprisonment for six months, or both, for each offense, in the discretion of the court.

It would also be desirable to construct in each cemetery a small, neat, house or shed to protect mourners from the sun or rain.

A sketch has been prepared to accompany the above regulations, showing the general plan to be followed in establishing a cemetery.

SANITARY CONDITIONS IN MORO PROVINCE.

The Moro Province consists of all that portion of Mindanao, including the many small islands adjacent thereto, not embraced within the boundaries of the provinces of Surigao and Misamis, which, being regularly organized provinces, are governed under the general provincial code.

Some idea of the size of the Moro Province may be obtained from the consideration of the fact that its 450,000 inhabitants give a density of population of only 15 to the square mile, as compared with 67 to the square mile for the entire Philippine Islands. There are 50,000 Moro children, 28,000 pagan children, and 12,000 Christian children of school age; that is, between 8 and 15, in the province.

The Moros and pagans, while at variance with the Filipino people in matters of religion, law, and customs, support them assiduously in their opposition to race suicide by rendering loyal obedience to the first part of the biblical injunction, but, unfortunately, here, as everywhere else in the Philippines, thousands of children are born but to die. The majority, perhaps, never live to see the first anniversary of their birth. The doctrine of right living needs to be taught and practiced in the midst of those who, through ignorance, are responsible for this alarming prevalence of race homicide. Nature has done her part to an unusual degree. The country is blessed with a salubrious climate and a bountiful food supply.

The superintendent of schools for the Moro Province in his annual report for last year, in discussing the purpose and scope of the local public schools, came very near to suggesting what will be the ultimate solution of the problem when he said:

"It is essential for the Filipino child to know how to live, not in the highly organized society of America or Europe, but here in his own native land, surrounded by more primitive conditions. And if this is the true purpose of education it would be foolish for us to impose upon the great mass of the Filipino peoples an education calculated to fit them for life under conditions which do not obtain in their native land, and which, even under the most favorable circumstances, can not obtain there for generations to come. It is, indeed, a legitimate purpose of education to stimulate healthy, natural growth to the utmost. We are therefore justified in teaching in the schools concepts a step in advance of existing conditions, that our pupils may be fitted to lead in the national development. But no step in the orderly development of national life can be slighted or omitted. The foundation must be well and firmly laid if we wish to raise an enduring superstructure.

"We have, then, to consider what is the next step to be taken in the orderly development of the people of this province. Few will gainsay the assertion that no considerable progress in culture or in any phase of national life can take place without the practical basis of material prosperity, and material prosperity in the Moro Province means agricultural and industrial expansion. The immediate purpose of education in our primary schools should be, then, to lay the solid foundations of prosperity by stimulating our agricultural and industrial development. That is, every primary school of our system, though including the ordinary subjects in its curriculum, should lay emphasis upon industrial or agricultural training. This does not mean, however, that opportunity should not be given to all who so desire to educate themselves for professional careers. It merely determines the kind of instruction which will be most useful to the vast majority of pupils whose opportunities for education are limited to the primary school."

The superintendent was not writing of sanitation, but he could have gone further and shown that the knowledge of how to live correctly means infinitely more than knowing how to make a living; it signifies, from the standpoint of the sanitarian, rules for perfect culture of mind and body. It is true of the people of the Moro Province, as it is true of the people of the whole world, that if they had the knowledge and desire they could literally choose between health

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and disease, not always individually, for the sins of ancestors are visited upon their descendants, but, as a race, man directs his own destiny and can select between good and evil in health matters as well as in other things; hence, it is but natural that the sanitarian should cherish the belief so beautifully expressed by the late Doctor Parkes that as time unfolds the scheme of the world it is not too much to hope that the choice will be for good.

The Moro Province is divided into five districts known as Zamboanga district, which includes the subdistrict of Dapitan, Sulu district, Lanao district, Cotabato district, and Davao district, each having its own capital and being subdivided into municipalities and tribal wards. The provincial capital is at Zamboanga, the capital city of the province of the same name, and the chief commercial, political, and social center of Mindanao. This municipality is now governed by a Filipino president, a Filipino secretary, an American vice-president, and a council composed of five Filipinos, one European, and one Chinaman. The Chinese business interests of Zamboanga are larger than all other interests combined, the representatives of that race being merchants, brokers, planters, and landowners. The Chinese of Zamboanga are proverbially generous in their support of every public measure, improvement, or amusement that is for the general good. They recently subscribed liberally to a fund to pay off the debt of the rectory of the local Episcopal Church, and they as cheerfully support the local health ordinances, and in every way display a patience, persistence, and conservatism which must inevitably result in permanent success and reflect credit on their race.

The general provincial government is vested in a governor, attorney, secretary, treasurer, superintendent of schools, and an engineer who constitute the legislative council.

THE PROVINCIAL BOARD OF HEALTH.

The act of the commission, authorizing the organization of the Moro Province, went into effect July 15, 1903, but it was not until March 29, 1905, that the legislative council passed Act No. 110, providing for the establishment of a provincial board of health with authority to organize district and municipal boards of health.

The provincial board of health consists of the governor as president, the superintendent of schools, and the provincial engineer. The chief clerk in the office of the provincial secretary is designated by law as the secretary of the board, and the attorney for the Moro Province as its legal adviser, thus very closely identifying the provincial board of health with the legislative council.

The board as originally organized contained two physicians, the governor, Maj. Gen. Leonard Wood, and the superintendent of schools, Dr. N. M. Saleeby. The board as now organized is without a medical member; however, this anomalous and undesirable state of affairs is somewhat relieved by a provision of law requiring that the provincial board of health shall exercise its powers under the direct supervision of the bureau of health for the Philippine Islands. The powers of the board are varied and include the general supervision and control over the health and sanitary conditions of the Moro Province, including the health of domestic animals and the control of the district and municipal boards of health; it is required by law that it shall cause to be prosecuted all violations of sanitary laws and enforce the regulations of the bureau of health for the Philippine Islands throughout the Moro Province. It has the power to abate nuisances endangering the public health; to remove the cause of any special disease or mortality; to make and enforce such interior quarantine regulations as it may deem necessary in any part of the province, and to make and enforce quarantine regulations (subject to the approval of the chief quarantine officer for the Philippine Islands) at ports of entry or other ports at which the quarantine service may not have been established. It is also charged with the duty of making and enforcing regulations for the maintenance, in a sanitary condition, of the prisons and other public institutions of the province or of any municipality within the province, and to cause every provincial and district jail or other public institution within its jurisdiction to be visited at least once a year by a member of the provincial board of health, for the purpose of investigating the sanitary condition thereof and of making recommendations for the improvement of the same. It must also provide for the medical attendance of prisoners confined in provincial, district, and municipal jails, or other public institutions, and, in its discretion, on indigents. It is in duty bound to lend its assistance to medico-legal cases when requested by proper legal authority.

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Beside its general powers, it is also vested by law with contingent emergency powers to the extent that when in its opinion the Moro Province, or any portion thereof, is threatened with an epidemic of infectious, contagious, or communicable diseases, the provincial governor may, in his discretion, by proclamation, declare the province, or any part thereof, to be threatened with an epidemic and vest the provincial board of health with emergency powers to enact such emergency health ordinances as it may deem necessary to prevent the occurrence or spread of the threatened epidemic; such ordinances to have the force and effect and to be enforced in the same manner as laws enacted by the legislative council. It is provided that all emergency health ordinances and regulations shall become null and void when the governor, by executive proclamation, shall declare that the danger of an epidemic has passed unless he shall order otherwise.

DISTRICT BOARDS OF HEALTH.

In addition to the provincial board of health, the law declares that there shall be in each district of Moro Province a district board of health, which shall consist of the district governor as president, the district secretary, and where provided for by the legislative council, a third member, who shall be a duly qualified physician. In cases where the legislative council has not provided for this specified third member, the district treasurer is required to act in that capacity.

The district board of health is the direct agent of the provincial board of health, even to the extent that it is required to hold such meetings, perform such duties, and exercise such powers as the provincial board of health may require.

MUNICIPAL BOARDS OF HEALTH.

Whenever in its opinion it may be advisable, the provincial board of health may establish in any municipality of the Moro Province a municipal board of health, which shall consist of the municipal president as president, the municipal secretary as secretary, and a third member to be appointed by the provincial board of health, who shall, when practicable, be a duly qualified physician or an undergraduate of medicine (cirujano ministrante). If a person of such qualifications is not available, a male school teacher of the municipality may be designated.

Municipal boards of health are also agents of the provincial board of health, but act under the supervision of the district boards of health, and, like district boards of health, must hold such meetings, perform such duties, and exercise such powers (not in excess of the powers conferred by the Philippine Commission) with reference to the health and sanitary conditions of their respective municipalities and barrios, as from time to time may be prescribed by the provincial board of health.

From the scheme of organization it will be seen that the responsibility for the health service of the Moro Province lies almost entirely with the provincial board of health, to which has been given a monopoly of power, as well as a multiplicity of duties. The peculiar conditions in this province render it advisable that the directing authority, in an innovation so momentous, so easily misconstrued, and so alien to the ideas and customs of a semicivilized people, should be possessed of both legislative and executive powers, such as the provincial board of health is endowed with by virtue of its close identity with the legislative council of Moro Province.

Experience has demonstrated that it is much easier to say than to do in matters of public sanitation. With all this legal machinery and the effective scheme of organization, it has been impracticable to do much work of a permanent nature outside of Zamboanga, the capital city. In this district alone, from July 1, 1905, to August 27, 1906, ₱5,675.99 were expended in salaries and ₱3,639.30 for contingent expenses, which, with a similar item of ₱58.33 expended for Cotabato district, makes a total of ₱9,373.62 appropriated for the maintenance of the provincial sanitary service for that year. While the work has not been prosecuted so vigorously since the loss of the medical member of the board, yet in the municipality of Zamboanga during the calendar year ended December 31, 1907, there were made 1,929 vaccinations by the local board of health, and many public improvements were inaugurated, especially in the matter of the water and food supply for the municipality. These improvements were mainly due to the interest of the post surgeon, who is also president of the municipal board of health, and to the efficient municipal sanitary inspector, a sergeant in the Hospital Corps of the army.

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Mention should be made also of the prompt and efficient manner in which the cholera situation, when imminent or present, has been handled by the medical officers of the army throughout the Moro Province.

The interests of the public health have suffered somewhat from the wise determination of the legislative council to enforce a pay-as-you-go policy.

In the last report of Maj. Gen. Leonard Wood as governor of Moro Province, in speaking of the condition of the public health, it is stated:

"The lack of a provincial hospital is keenly felt. Thus far the military hospitals, with considerable inconvenience to themselves, have taken care of a large number of civilian sick and wounded, accidents, etc. It is hoped that funds will be available in the immediate future to commence the construction of a provincial hospital at Zamboanga.

"Vaccinators have been at work during the greater portion of the present year and a very large number of people have been vaccinated. There have been no serious epidemics of diseases. The diseases found farther north, such as amœbic dysentery and cholera, are seldom met with in this province. A few cases of smallpox have appeared from time to time among the hill tribes, but have not developed into an epidemic. The public health as a rule has been very good. The effects of this climate upon white men does not appear to be injurious. Both civilians and soldiers who take a fair amount of exercise and live a considerable portion of their time in the open air are healthy. The troops, especially, present a rugged and healthy appearance, although the large amount of field service has produced here, as elsewhere, a certain increase in the sick report. There is no reason to believe that this country can not be inhabited by white people without injurious results to their health. It will probably be necessary, as everywhere else in hot countries, for white people to obtain a change of climate for a few months at an interval of four to six years, especially after middle life. Benguet, Luzon, and the neighboring country present all the climatic advantages of the Temperate Zone, as do some of the high mountain areas in Mindanao. The Mindanao highlands are as yet unopened, except about Lake Lanao, but Benguet is easily reached, and the pine forests and fine bracing air are all that can be desired. The Lanao country is hardly high enough to secure an entire change.

"*Health of animals.*—Since the people have come to understand the object of the isolation and destruction of animals for surra and glanders and the methods proposed by the government for their preservation, there has been little or no opposition to the execution of the laws looking to the quarantining and destruction of animals suffering from surra and other infectious diseases."

Gen. Tasker H. Bliss, the successor of General Wood, in supplementary report for a fractional part of the same year, said:

"The provincial government has pushed forward vaccination as rapidly as practicable and its results are manifest in the disappearance of smallpox. Great care has been taken to prevent the introduction of cholera from infected ports in the East.

"Hospitals and dispensaries are on the list of projects proposed for consideration as soon as the funds are available. In the meantime the thanks of the province are due to the army for its assistance in this respect. Indigents and other sick and injured are treated in the military hospitals. The indigents are paid for by the province at a uniform rate. The army surgeons serve as health officers at a small remuneration, which the province will increase whenever it is able. Meanwhile these surgeons render every assistance with the utmost willingness. The present arrangement gives us the equivalent of ten or twelve bed hospitals at the rate of about ₱250 each per month.

"The use of these hospitals by the natives has had a wonderful effect in increasing a friendly feeling toward the government."

It may be said that outside of the municipality of Zamboanga—and even there to a large extent—public sanitation in Moro Province is dependent on the army and constabulary. Wherever there is an army post there is a health officer. At Davao the Philippine Constabulary has established a hospital, which is well conducted under the supervision of an officer of its medical corps. Constabulary hospitals exist in other points and are operated satisfactorily. There are army surgeons who act as health officers at Zambonga, Jolo, Iligan, Malabang, Parang, Cotabato, and Camp Keithley, while Cagayan, Dansalan, Makar, Bajanga, Coraga, Mati, and Cateel are without any semblance of health

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organization; Dapitan, Siassi, and, as stated before, Davao are under the constabulary.

Taking everything into consideration, a good start in public sanitation has been made in the Moro Province. Future success depends upon following up the advantages already won and extending the service gradually at first—that is, more educationally than aggressively, more by the public schools than by public force.

LEGISLATION.

Besides the appropriation acts, the following laws which either directly or indirectly concern the interest of the bureau of health were passed during the year:

Act No. 1666, July 2, 1907, appropriated ₱100,000 for the congressional relief fund, to be loaned under certain conditions to the provinces and municipalities of the Philippine Islands for the purpose of constructing artesian wells, markets, slaughterhouses, and other public works of a permanent character.

Act. No. 1670, July 8, 1907, authorized the board of trustees or directors of any asylum or institution in which poor children are cared for and maintained at public expense to place, with the consent of the director of health, any orphan or child so maintained whose parents are unknown, or, being known, are unwilling to support such child, in charge of any suitable person who may desire to have such child, and shall furnish satisfactory evidence of his ability and suitability to maintain, care for, and educate such child.

The intrusting of any child to a person in the manner prescribed by law does not affect the legal status of such child or prejudice the right of any person entitled to its legal custody or guardianship.

It is provided that if the director of health, who is required to visit such children personally or by agent every 3 months, finds that any child which has been taken from any asylum or institution is not being properly maintained, cared for, and educated, he is required to place the child again in the asylum or institution from which it was taken.

Act No. 1677, August 16, 1907, entitled "An act to provide anatomical material for the advancement of medical science," provides that the body of any deceased person which is to be buried at public expense, and which is unclaimed by relatives or friends for a period of 48 hours after death, shall be subject to the disposition of the bureau of health, and by order of the director of health and subject to such regulations as he may prescribe, and the secretary of the interior approve, may be devoted to the purpose of medical science and the advancement and promotion of medical knowledge and information.

The making use of the body of any deceased person for scientific investigation except for autopsy, or as provided by Act No. 1677, is prohibited by law.

Act No. 1688, August 17, 1907, creates, under the heading of "Artesian wells," a permanent reimbursable appropriation, to the credit of which was deposited the sum of ₱37,000. The provision was made that receipts which may accrue for insular bureaus, provincial and municipal governments, and other sources on account of services rendered and supplies provided in sinking artesian wells and equipping the same with the necessary pumping machinery, storage tanks, etc., necessary to provide potable water or fire protection, or both, should also be deposited to the credit of this permanent fund, to be expended under the supervision of the director of public works.

Act No. 1694, August 21, 1907, repealed section 14 of Act No. 309, which made all expenses incurred in the operation of vaccines and in carrying on public vaccinations in the Philippine Islands, except the salaries of the provincial and municipal boards of health, payable from the funds of the insular treasury. (Act No. 309, better known as the "compulsory vaccination law," was passed before the establishment of the bureau of science, and soon after the establishment of civil government. The changed conditions made it advisable to turn over the making of vaccine to the bureau of science and to make the expenses of local vaccinations chargeable to the municipalities to which they pertained. Insular vaccination parties are still maintained by the bureau of health.)

Act No. 1704, August 31, 1907, incorporated the Philippines Medical School, and vested the powers of the corporation in the board of control of the Philippines Medical School, consisting of the secretary of public instruction, the secretary of the interior, one other member of the Philippine Commission, designated by the governor-general, and the dean of the faculty of the school.

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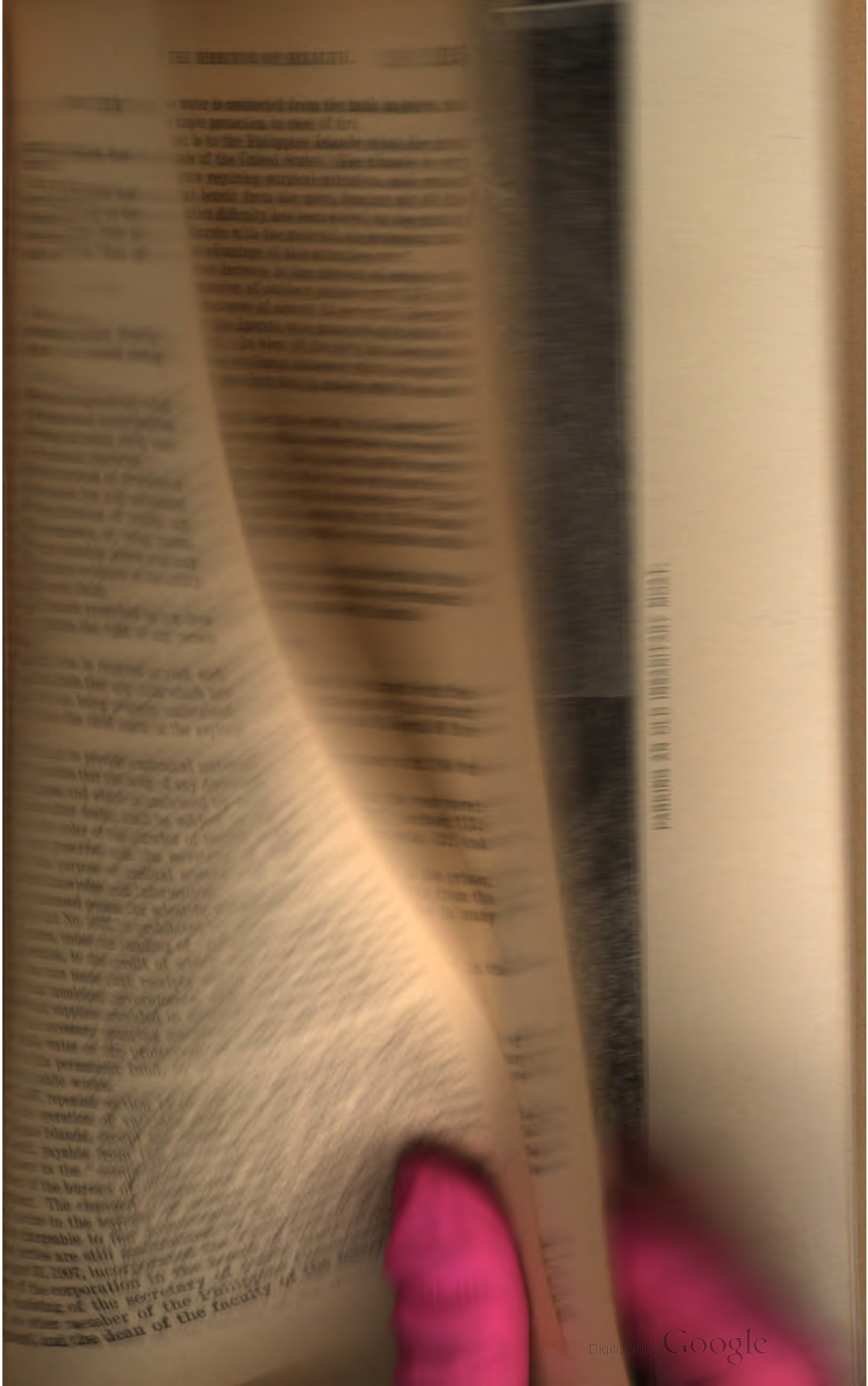
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Act No. 1711, better known as the "leper act," September 12, 1907, empowered the director of health or his authorized agents to cause to be apprehended and detained, isolated, segregated, or confined, all leprous persons in the Philippine Islands, and makes it the duty of all insular, provincial, or municipal official employees having police powers to assist in such duties when requested by the director of health or his agents.

All protests and petitions are given careful attention, and if the diagnosis is questioned, no person is forcibly removed to the leper colony or other place of segregation until the diagnosis has been confirmed by bacteriological methods.

The leper act also makes it unlawful for any person knowingly to detain or harbor on premises subject to his control, or in any manner conceal or secrete, or assist in concealing or secreting, any person afflicted with leprosy with the intent that such person shall not be discovered, or to assist in the support of such lepers.

The director of health is authorized to cause to be established hospitals and detention camps at such places as may be necessary and to regulate the admission and outgoing of voluntary helpers as well as the patients.

Act No. 1725, September 23, 1907, amended Act No. 1458, known as the "cemetery act," by authorizing the director of health to grant permits for the removal of all human remains in cases where arrangements had been made to do so before the passage of the said cemetery law which prohibits disinterments until one and one-half years have elapsed from the time of burial.

Act No. 1761, entitled "An act gradually to restrict and regulate the sale and use of opium pending the ultimate prohibition of the importation of opium into the Philippine Islands in whatever form except for medicinal purposes, as provided by the act of Congress approved March 3, 1905, and prohibiting any person from having the possession of opium, cocaine, or alpha or beta eucaine, in any of their several forms, or any derivative or preparation of any of such drugs or substances, except for medicinal purposes," was enacted October 10, 1907. (This act has been mentioned in connection with the opium habit in another part of this report.)

Act No. 1771, October 11, 1907, so amended the cemetery act as to permit, with the approval of the director of health or his authorized agent, the expenditure for general municipal purposes of any cemetery funds remaining on hand on the 1st day of January of each year in excess of the amounts expended or obligations incurred to keep in order, improve, or embellish burial grounds or cemeteries of the respective municipalities.

Act No. 1797, October 12, 1907, provided that when at the request of the governor-general to guard civil prisoners, to aid the director of health of the Philippine Islands in the enforcement of sanitary regulations, municipal health ordinances and health laws, or to aid other civil authorities in the maintenance of law and order and the enforcement of their authority, officers of the United States Army and officers of the Philippine Scouts in command of troops shall be vested, while in the performance of their duties, with the powers of peace officers.

This act repealed Act No. 1505, which was similar in its provisions, but not so broad in scope, as it was passed especially to cover conditions in Mariquina with reference to the protection of the water supply.

Act No. 1809, February 14, 1908, appropriating the sum of ₱100,000 for the relief of sufferers from public calamities and authorizing a committee composed of not to exceed 7 members of the Philippine Commission, to be appointed by the president thereof, and 7 members of the Philippine Assembly, to be appointed by the Speaker thereof, to consider and act upon all petitions for the relief of sufferers from general conflagrations, typhoons, floods, earthquakes, famine, pestilence, epidemics, and other disasters which amount to public calamities.

BAGUIO HOSPITAL DIVISION.

The Baguio hospital division includes the management of the Baguio hospital and the sanitary supervision of the Province of Benguet. A new 30-bed hospital has been built, consisting of 2 general, 2 detention, and 2 private wards, an office, pharmacy, laboratory, operating, surgical dressing, and consulting rooms, 2 parlors, 6 private rooms, and the necessary number of bath and toilet rooms. The building is constructed of Benguet pine, with metal walls and ceilings, and is supplied with hot and cold water throughout. Water is pumped from a spring into a tank with a capacity of 16,000 gallons, constructed on the high

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ground above the hospital. The water is conducted from the tank in pipes, and has pressure enough to furnish ample protection in case of fire.

During the hot season Benguet is to the Philippine Islands what the great mountain resorts are to the people of the United States. The climate is very favorable for convalescent patients requiring surgical attention, and women awaiting confinement derive great benefit from the pure, bracing air of this region. Now, since the transportation difficulty has been solved by the opening of an automobile line connecting Baguio with the railroad, an increasing number of invalids and others will take advantage of this attractive resort.

There has again been an enormous increase in the number of persons who applied for relief. Last year the number of outdoor patients was 1,371; this year the number was 2,291, or an increase of almost 82 per cent. The great majority of the persons treated were the Igorots, who came not only from Benguet, but from other provinces as well. In view of the fact that these people belong to the non-Christian tribes, the civilizing influence which the hospital exerts can scarcely be estimated, and the fact that it makes largely for peace and order can not be questioned.

The highest official temperature during the year occurred on November 22, 1907, when it reached 78.8° F. The lowest official temperature was reached on January 7, 1908, when it registered 48.1° F. The highest monthly average or mean temperature was 74.85° F., in June, 1908, while the lowest monthly average or mean temperature was 53.39° F., in January of the present year. There were 163 days on which rain fell, the total rainfall amounting to 131.09 inches, which is rather higher than usual. The rainiest month was August and the driest February.

The year has been a particularly successful one in the administration of the affairs of the division. There were 4,400 individual vaccinations performed in the province and a large number of sanitary fixtures installed in Baguio.

BILIBID SANITATION DIVISION.

The Bilibid sanitation division of the bureau of health is charged with the sanitation and hygienic care of all the inmates and employees of the insular prisons, and the running of Hospital A for general cases and Hospital B for tubercular cases.

There was a total of 114 deaths from all causes as compared with 180 for the previous year.

The prevailing diseases in the prison general hospital during the year were: Ankylostoma, 1,774 cases; amoebic dysentery, 617; malaria, 297; beriberi, 113; acute dysentery, 62; trachoma, 53; conjunctivitis, 44; pneumonia, 32; and Asiatic cholera, 8 cases.

So far as is known, none of the beriberi cases were contracted in the prison. A large proportion of them occurred in prisoners who were suffering from the disease at the time of their admittance, having contracted the same in many cases in the smaller provincial jails.

Of the 8 cases of cholera, 3 of the patients died and 5 recovered.

Statistical tables concerning the work of this division may be found in the appendix to this report.

IWAHIG PENAL SETTLEMENT.

The sanitary improvement which began so auspiciously since the bureau of health took charge of this branch of the work has continued during the year, and the table on page 126 will show more conclusively the results which have been obtained than any written statement which could be prepared.

The drainage of the colony has now advanced sufficiently far so that the mosquitoes have disappeared almost entirely from that section of the settlement in which the houses are located. Notwithstanding this, however, the prophylactic administration of 5 grains of quinine daily to each inmate has been continued.

BOARD OF DENTAL EXAMINERS.

This board is organized under the provisions of Act No. 593 regulating the practice of dentistry in the Philippine Islands, and consists of 3 members, Dr. H. C. Strong, president, Dr. A. Vergel de Dios, member, and Dr. A. P. Preston, secretary-treasurer, who examine all applicants to practice dentistry, and exercise supervision over the interests of the profession throughout the Archipelago. During the fiscal year there were 2 regular and 5 adjourned meetings.

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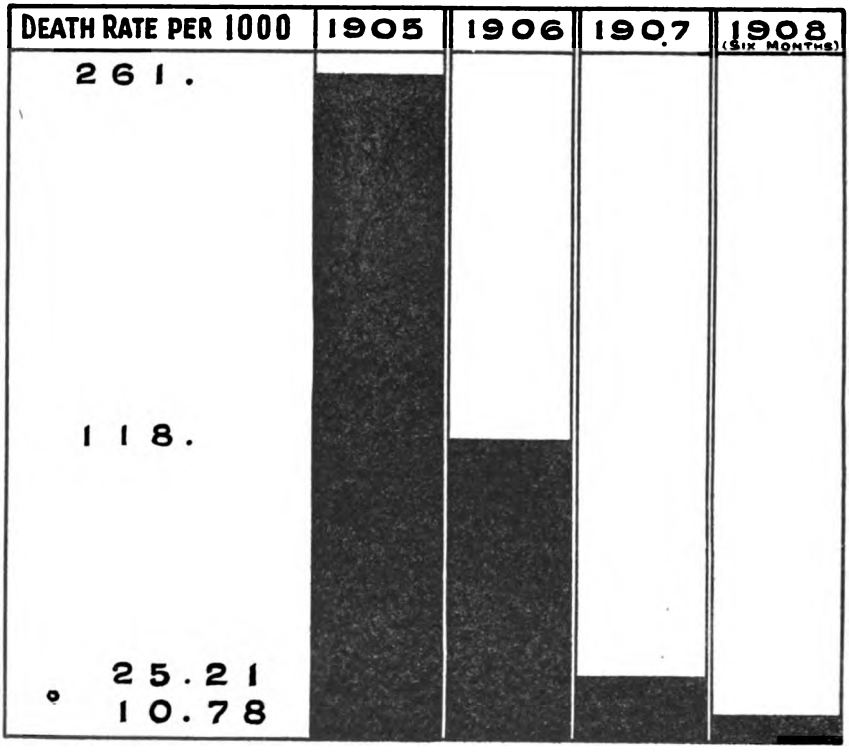
Eight applicants appeared before the board for examination, 6 of whom were graduates of reputable dental colleges, and 2 cirujano ministrantes in dentistry from the Santo Tomás University. Of the American candidates, 4 were successful and 2 failed. Of the cirujano ministrantes, 1 was successful and 1 failed.

There has been no change in the membership of the board except that in September, 1907, Dr. L. C. O'Donnel was temporarily appointed to succeed Dr. A. P. Preston, who was on leave in the United States. Upon Doctor Preston's return in February, he was reappointed to his former position, Doctor O'Donnel having in the meantime resigned.

CHART SHOWING REDUCTION IN DEATH RATE AT THE IWAHIG PENAL SETTLEMENT, PALAWAN, SINCE THE BUREAU OF HEALTH TOOK CHARGE.



During the year there were 3 complaints filed with the board against persons for the alleged violation of the dental law. Abuses were corrected without resort to legal procedures.

There were collected from all sources ₱140, and expended for all purposes ₱376.

BOARD OF MEDICAL EXAMINERS.

The board of medical examiners, composed of Dr. Eleanor J. Pond, president; Dr. Salvador del Rosario, secretary-treasurer, and Dr. Z. Laughlin, member, operating under Act No. 310, regulating the practice of medicine and surgery in the Philippine Islands, licensed during the year 19 doctors of medicine, 24 licentiates of medicine, and 18 cirujano ministrantes. This board collected in fees ₱1,470.

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BOARD OF PHARMACEUTICAL EXAMINERS.

The board of pharmaceutical examiners, in addition to conducting examinations and issuing certificates, is also charged in a supervisory capacity with the administration of Act No. 597, regulating the practice of pharmacy in the Philippine Islands.

The following extract from the report of the secretary-treasurer will show the principal operations of the board for the fiscal year:

"During the year two examinations were held, one on July 2, 1907, at which were present 23 applicants, the other held January 2, 1908, at which 39 applicants presented themselves. Of this number 28, or 37½ per cent, attained the required average and were issued certificates as registered pharmacists.

"During the year 60 apprentice certificates and 8 temporary pharmacists' certificates were issued without examination.

"During the year from all sources there were collected ₱1,960. Of this amount, ₱760 were examination fees for the examination held July 1, 1908. Treasurer's receipts on hand, ₱1,960.

"The following were the salaries and fees paid to the members of this board for services during the period covered by this report:

"Salary secretary-treasurer	₱300
"Fees for two members for 62 applicants, at ₱4 each	576
"Total	876

"The board is composed of Hugo Salazar, president; Mariano Torres Pamintuan, member, and Ed. M. Chervenka, secretary-treasurer."

CIVIL HOSPITAL DIVISION.

The record of this hospital for the year shows that it has made a substantial contribution to the health of the community and that its sphere of usefulness has not been diminished.

The following extract taken from the report of the chief of the civil hospital division and the statistics published in the appendix will cover the scope of the work of this division:

"Total number of patients admitted for treatment, 1,487. Of these there were 811 Americans and Europeans (Anglo-Saxons), 622 Filipinos, and 54 Chinese, Japanese, and East Indians. There were 1,160 male patients and 327 female patients, which may be further classified as 1,007 pay and 480 free patients—that is, emergency cases and civil employees whose salaries do not exceed ₱80 per month. Of the total there were 1,445 patients treated by the hospital staff and 42 by outside physicians.

"Total number of deaths, 35; of which number 3 were treated by outside physicians. Of those treated by the hospital staff, 7 were in a dying condition when admitted to the hospital. The total percentage death rate for the twelve months was 2.35; of those treated by the hospital staff, 2.21. Deducting the 7 patients who were in a dying condition when admitted, the low death rate of 1.73 per cent was obtained. The death rate for those cases treated by physicians other than the hospital staff was 7.14 per cent.

"The total number of days spent in the hospital by all patients was 16,446. The total number of days for those patients who were treated by the hospital staff alone was 15,571.

"The following summary shows the work done by the attending physician and surgeon, with the assistance of the house surgeons:

"Number of patients seen and prescribed for in office	15,245
"Number of calls made in city	2,310
"All patients in hospital seen twice daily	59,860
"Total	77,415

"The above does not include major or minor operations or confinement cases.

"The total number of prescriptions filled at the hospital dispensary was 7,584, counting refills. The total number of dressings done in the operating and dressing rooms was about 14,600. There were about 1,500 minor operations performed upon patients not confined to hospital."

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CLERICAL DIVISION.

In addition to carrying on all the different lines of work which have heretofore been followed out, the enforcement of the food and drugs act has thrown a large amount of additional work upon this bureau, which has been felt principally in the clerical division.

The following extract from the report of the chief of the clerical division and cashier of the bureau of health upon the work of his office contains timely observations of certain conditions which not only obtain in this bureau but affect the entire service:

"The constant movement of American personnel for reasons of promotion, dissatisfaction, and unsuitability to the climate has made the question of permanent office force a serious one. In most cases no sooner had an employee been trained enough to permit of his working independently than he was removed or removed himself, and the whole process began over. The question has been partly solved by the employment of Filipino clerks, but so far we have been unable to secure qualified Filipino stenographers in English, although persistent efforts have been made upon the statement of other bureaus that they have been successfully tried. Those who have been tried have failed from lack of trained concentration and sufficient knowledge of English. This latter qualification would appear to be most difficult to attain. As typists and copyists the Filipino excels, and those employed in this office, as well as the Americans, have without exception been faithful in attendance and necessary overtime work.

"The volume of work has remained undiminished; in fact, owing to the necessity of carrying on two offices, one in Manila and one in Baguio during the Benguet season, the work was increased somewhat. It is believed that the system devised for this purpose was effective and that, with thorough understanding and full report of action taken at each end of the line, it is not necessary to remove records to Baguio. If, however, it should be decided that it was desirable to move an entire office to Baguio, the system would have to be considerably changed, and the success of such a plan in an emergency bureau is doubted.

"It is believed that the general health of employees was as good or better during the hot season, although the hours were not changed as heretofore. If the hours could be shortened and the employees prevailed upon to spend the extra time out of doors or at physical exercise of some sort the change would be beneficial.

"From observations of the work of other bureaus and offices it is believed yet that this bureau does more economical office work than any other bureau of the government, counting efficiency, promptness, amount, and accuracy of work."

The financial report for the year will be found in the appendix.

CULION LEPER COLONY DIVISION.

The following extract from the report of the chief of the Culion leper colony division is a brief record of the colony for the year:

"On June 30, 1907, there were 731 lepers at the colony; on the same date this year there were 1,333. During the fiscal year ended the former date there were 4 collections of lepers, aggregating 734 in number, transferred to the colony; during the same period ended June 30, 1908, there were 8 collections, aggregating 1,554, received here as follows: September 16, 221; November 25, 158; January 24, 211; February 3, 234; February 23, 257; March 2, 148; March 16, 175; and May 10, 150. Up to June 30, 1907, 1,100 lepers had been received at the colony; by the same date this year there had been received 2,654. Up to the past year these were mostly Visayans; now there is a more even representation of different races, as during the past year Bicols, Tagalogs, and Ilocanos have been admitted. The one Spaniard mentioned in last year's report still remains the only white leper, and, with two Chinamen, constitute the only foreigners at the colony.

"At the colony the following improvements have been accomplished this year:

"*Additional quarters for about 500 lepers.*—These are built mainly of bamboo and nipa, and while temporary by reason of the nature of this material, still have been constructed with hard-wood framework and double floor, and, except in case of fire, should prove serviceable for at least 4 or 5 years. The bamboo for these and other purposes of repair, amounting to some 5,000 pieces, was

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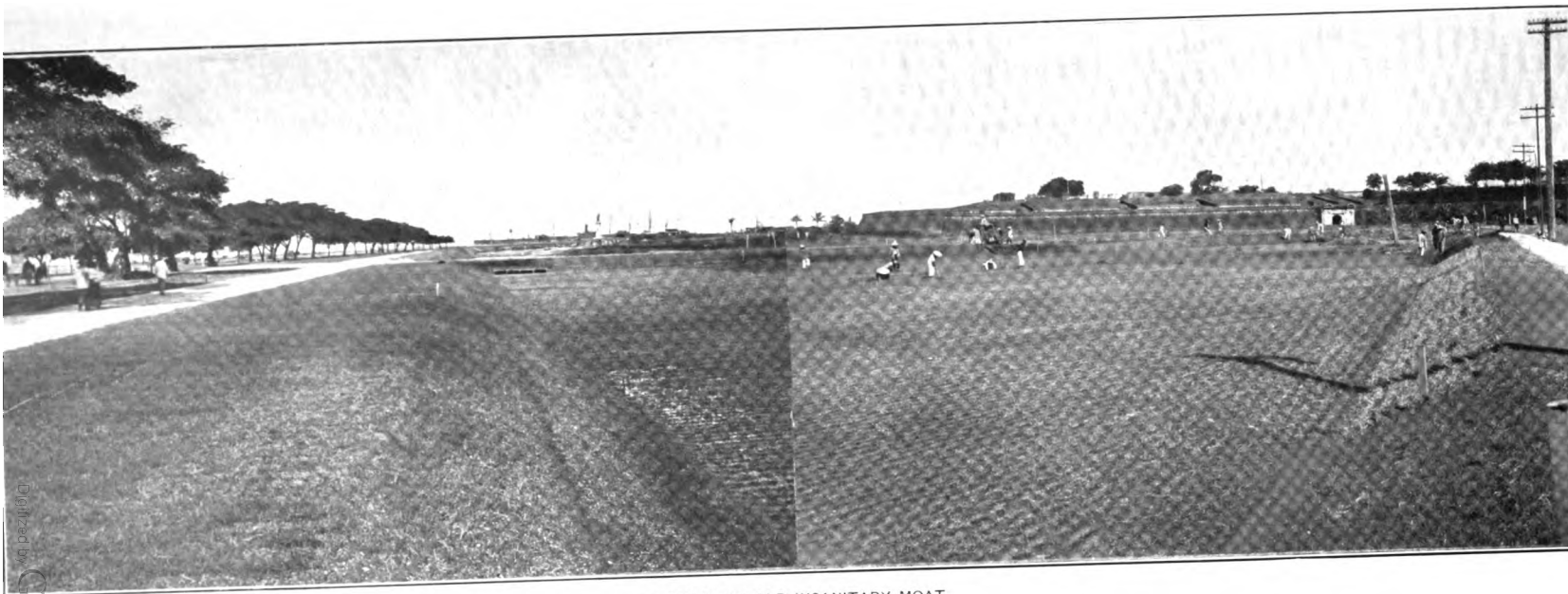

PARKING AN OLD INSANITARY MOAT.

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MOSQUITO BREEDING GROUND, CALLE BANCUSAY (BELOW TIDE LEVEL).

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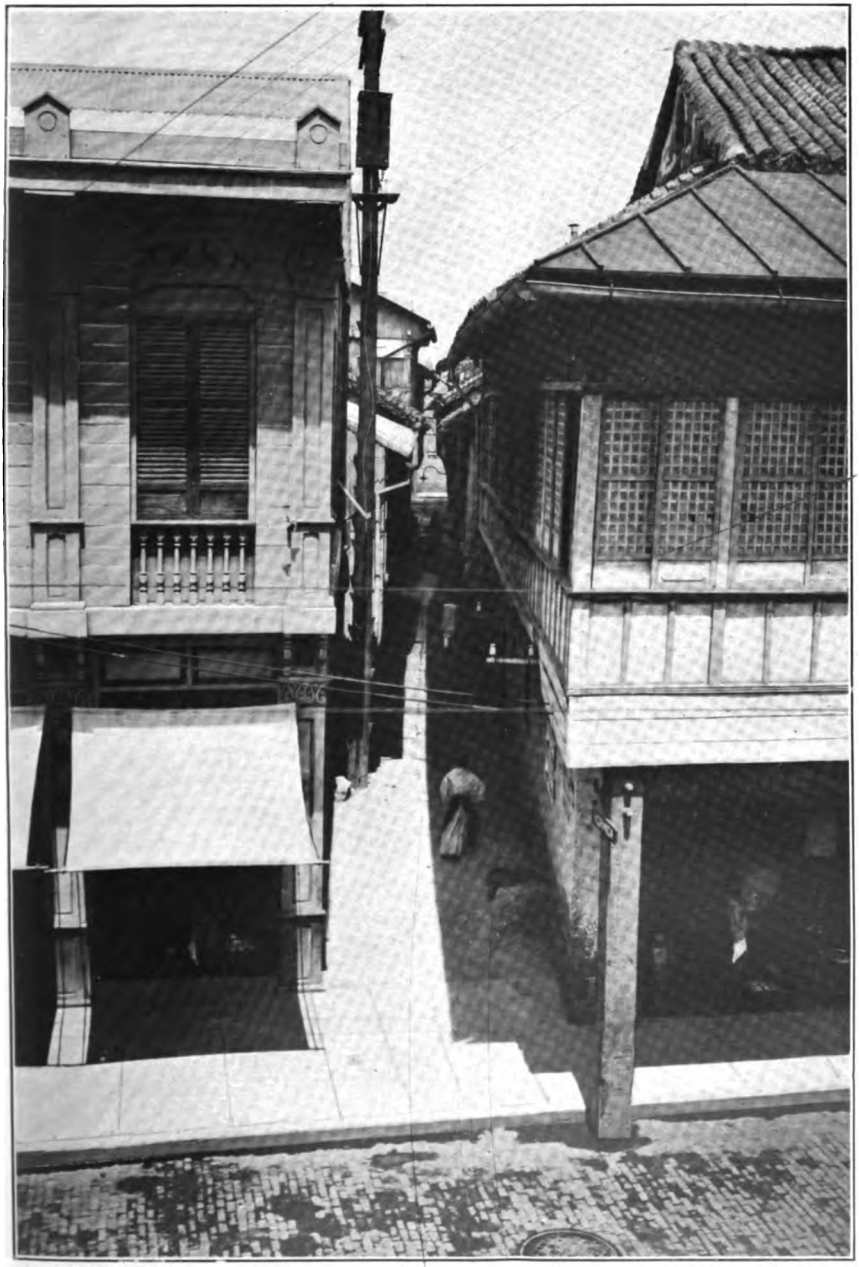

CALLE HORMIGA (NARROW STREET).

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CALLE MORRIONES, TONDO (NEW WIDE STREET).

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NICHES, PACO CEMETERY.

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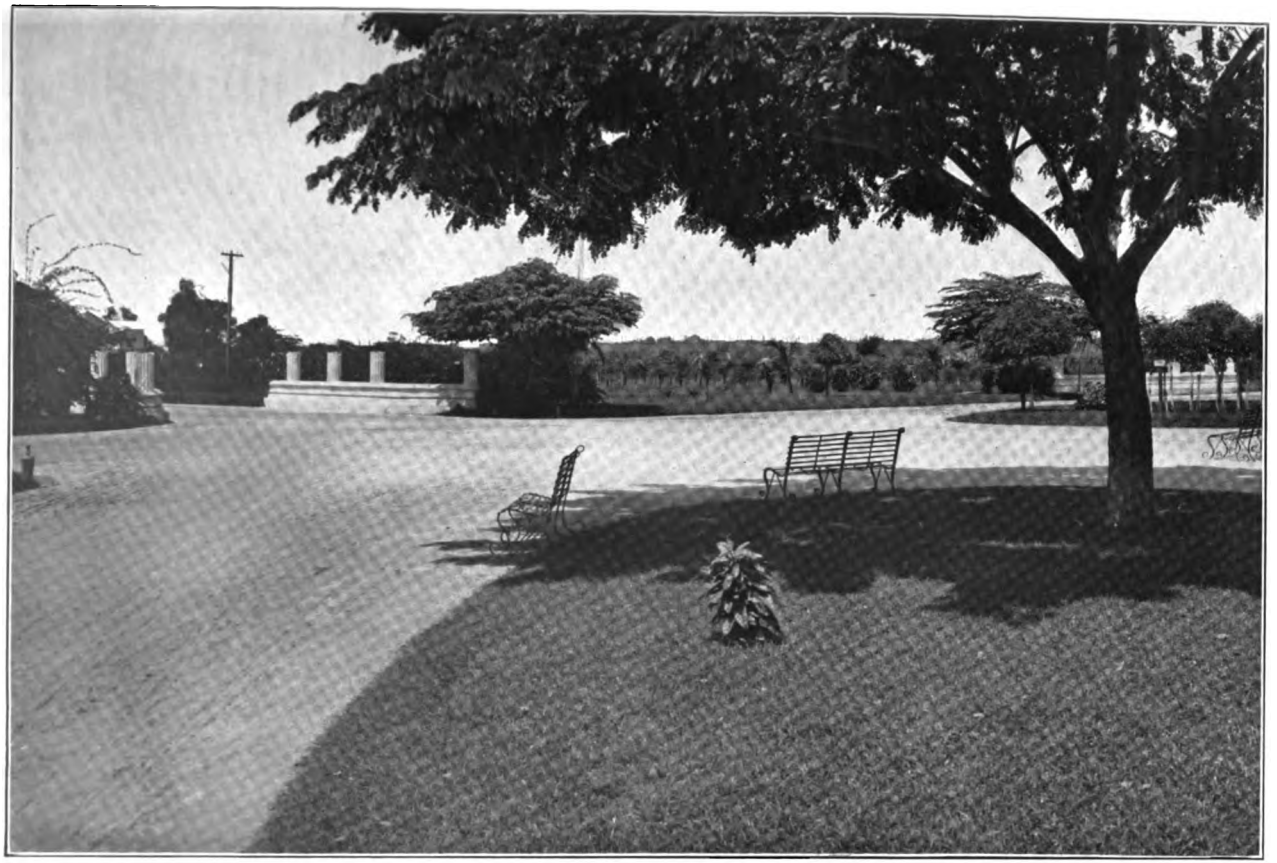

DRIVEWAY, CEMENTERIO DEL NORTE.

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cut on Culion Island, about 25 miles distant by water; and considerable delay in the construction work was caused by inability to have same towed promptly to the colony.

"*Excavation for new hospital.*—Probably the most pressing need of the colony, especially for the rapid segregation of all the lepers, is adequate hospital accommodations. As the number of lepers rapidly increased the present hospital soon became overcrowded. The past year has assured the fulfillment of this urgent want, and it is anticipated that before the present year has passed a reinforced concrete hospital of 100 beds will be completed. This is planned to be constructed as a double hospital, a wing for each sex, with central administration, operating, and sterilizing rooms, kitchen, separate baths, wash, and toilet closets. The site chosen has necessitated considerable excavation of solid rock, requiring blasting and allowing but slow progress in the work at first; also the scarcity of labor and the difficulty of getting the same to work at the colony in close proximity to lepers has been no inconsiderable obstacle in the way of accomplishing this work more rapidly.

"*Women's hospital.*—To relieve the congestion of the former hospital another building was fitted up for the women, and the former one is now being used for the men only. This building was fitted up temporarily to meet the requirements until the new hospital is completed and has water and sewer connections. It can accommodate some 50 patients, and together both hospitals accommodate about 100.

"*Addition to kitchen.*—As the colonists increased the cooking facilities became inadequate. These have been doubled by constructing another 4-hole cooking furnace of reinforced concrete and roofing over with galvanized iron, replacing the nipa roof formerly covering the fire boxes and removing the danger from fire. This work was practically all done by the lepers themselves.

"Buildings repaired and whitewashed or painted.

"Four fire stations equipped with fire hose, ladders, buckets, axes, etc.

"At Balala, the nonleper resident part of the colony, there has been accomplished:

"*Construction of house for resident physician.*—This is built of strong materials, having 7 rooms, including kitchen, bath, and closet, and supplied with modern sanitary arrangements.

"*Warehouse.*—A reinforced concrete warehouse, 96 feet by 34 feet, was constructed near the water's edge from where a stone wharf running out to deep water is being constructed. This constitutes one of the most serviceable permanent improvements, and being practically fireproof, removes danger from fire and probability of loss of supplies.

"*New road.*—A practically level road now extends from the employees' quarters at Balala to the colony. Its extension to the new hospital site is contemplated.

"*Additional labor quarters.*—This is of bamboo and nipa and of a temporary nature.

"Walks and canals around employees' quarters.

"Filling in sea front and constructing wharf and sea wall.

"The mortality among the lepers continues high. However, considering the great number received in extremely bad condition, some dying en route and some very soon after arrival, the fact that they may be all considered sick people and as such do not withstand well acute attacks of intercurrent diseases, the death rate does not seem exceptionally high, while it may appear so compared with that of healthy communities. The total number of deaths for the year was 958, occurring monthly as follows:

"1907:		"1908:	
"July	23	"January	87
"August	38	"February	96
"September	42	"March	116
"October	51	"April	86
"November	90	"May	114
"December	97	"June	118

"If no more new cases were received, the death rate would rapidly fall as the number became less. Of those admitted during the first year there remain 200 and of the second year 274, and now among these a death is comparatively

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infrequent. Some of them seem stronger, better nourished, and in better general health than when admitted, and may live a relative long time yet for a leper.

"Smallpox was imported into the colony by new arrivals in February, and during March, April, and May there occurred 8, 4, and 4 cases, respectively, of a mild type, with no deaths. Every case occurred in persons not previously vaccinated or not recently successfully vaccinated, and when this was accomplished no further cases developed after May 15.

"The behavior of the colonists has been good. No serious offense has been committed during the year. There is a leper police force of 15 men, unarmed, and under charge of an ex-constabulary inspector, who has proved a most valuable man in maintaining order and discipline. Considering the life of comparative idleness the lepers lead, that their passions and vices are not in any appreciable way curtailed by their disease and that some are pardoned prisoners for grave offenses, it is a source of satisfaction to report their conduct in this regard. Thirty-seven have at various times escaped or attempted to do so; 14 of these have returned or been returned, and of the remaining 23 a number have been located in Mindoro and Batangas, and will soon be returned. This appears to be but a natural consequence of their being isolated here and separated from home and family. It is but natural that some of the police, who are lepers themselves, should be in sympathy with their motives; and as they are the only guards to be reckoned with, it is not very difficult to accomplish their purpose. Again, formerly the colonists came from more distant localities and more difficult of access by improvised craft; now they are arriving from Luzon, to which it is not at all impossible to make a crossing even in small craft, when the weather conditions are favorable.

"There have been consumed from 8 to 10 beeves per week, and other rations consist of rice, mangoes, beans, fideos, fish, lard, onions, coffee, chocolate, sugar, milk, condiments, and vegetables as procurable. During this year they have been furnished with 2 carabao and with plows and other implements with which to do gardening, and given seeds, but very few are agriculturally inclined and have accomplished practically nothing in this regard.

"The problem of the separation of the sexes, at one time contemplated, still remains as reported last year.

"The health of some of the nonleper personnel has been but fairly good. Of the 4 sisters first assigned here, 2 still remain, the other 2 having returned to Manila on account of ill health. There are now 6 sisters since the increased number of lepers. The regular chaplain is at present in Manila on leave of absence."

INSPECTION DIVISION.

The inspection division is under the supervision of the assistant director of health, and includes the following sections: Medical inspections, food and drug inspections, water inspections, milk inspections, license inspections, sanitary inspections, disinfections, municipal boards of health, and miscellaneous section.

During the year there were made 394,782 sanitary inspections exclusive of the special inspections, 6,482 disinfections, and 6,054 applications for license inspections. The special inspections coming under the general supervision of this division include milk, water, food and drugs, and scientific inspections as required by law for determining the cause of special diseases or mortality.

The miscellaneous section includes the inspection of churches, schools, cemeteries, morgues, markets, health stations, river boats, and public conveyances in general; also provincial sanitary inspections.

It is required by law that all jails, asylums, and other public institutions in the Philippine Islands be inspected for the purpose of ascertaining the sanitary condition of the same. This work, for the most part, is done by the local officials; but as often as the exigencies of the service will permit the Director or Assistant Director of Health visits in person such institutions.

PROPERTY DIVISION.

In this division there were 423 requisitions received and filled during the year, as follows:

Provincial requisitions	175
Health station requisitions	75
Central free dispensary requisitions	14
Central office requisitions	23

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San Lazaro hospitals requisitions	16
Civil hospital requisitions	20
Prison sanitary division requisitions	30
Board of medical examiners requisitions	1
St. Luke's Hospital requisitions	12
Bethany Free Dispensary requisitions	11
Philippine Medical School requisitions	4
Culion Leper Colony requisitions	16
Benguet sanitarium requisitions	18
Iwahig Penal Colony requisitions	8

To fill these supplies there were 112 requisitions prepared and forwarded to the bureau of supply, the rest of the supplies being filled from stock at this office.

These requisitions were divided as follows:

For the bureau of health (Manila)	44
For Culion Leper Colony	44
For Benguet Sanitarium	24

Of the above requisitions there were 244 shipments made, outside of delivery in the city and mail to the provinces, as follows: 161 shipments by steamships and 83 by railway.

The total value of supplies, exclusive of subsistence, purchased during the year amounted to ₱120,293.49, and the total amount expended was ₱105,681.65. The purchase of supplies was divided as follows:

Bureau of supply	₱59,180.06
Bureau of science	28,176.19
Bureau of prisons	563.35
Bureau of printing	11,500.17
Bureau of public works	37.40
Executive bureau	20,822.32
Total purchases	120,293.49

On July 1, 1907, there were on hand 39 simple-remedies packages; during the past year there have been manufactured 107 packages, and in the same period there were expended 137 packages, leaving on hand June 30, 1908, 9 packages.

The total value of supplies sold to individuals and other bureaus amounted to ₱2,006.58.

VACCINATION SECTION.

The following figures cover the receipts and disposition of vaccine virus for the past year:

	Units.
Virus on hand July 1, 1907	3,498
Virus received during the year	2,774,950
Total virus to be accounted for	2,778,448
Quantity of virus used in Manila	91,562
Quantity of virus used in provinces	2,684,025
Quantity of virus on hand June 30	2,861
Total on hand and expended	2,778,448

The above amount of virus for the provinces was divided into 881 shipments.

As compared with the quantity of vaccine virus used last year, there have been 6,000 units more shipped to the provinces and 15,888 units less distributed in the city of Manila.

The following figures show the receipt and disposition of the serum enumerated below:

Antiseptic serum:	Bottles.
On hand July 1, 1907	231
Expended during the year	2
On hand June 30, 1908	229

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	Bottles.
Plague prophylactic serum:	
On hand July 1, 1907	1,026
Expended during the year	2
On hand June 30, 1908	1,024
Surra (assorted):	
On hand July 1, 1907	110
Received during the year	147
Total to be accounted for	257
Expended during the year	136
On hand June 30, 1908	121

SANITARY ENGINEERING DIVISION.

The scope of the work of this division is very extensive, embracing, in an advisory and supervisory capacity, all sanitary engineering and structural work throughout the islands.

From the regular annual report of the division the following has been taken:

"In addition to the sanitary work throughout the city of Manila, shown in tabulated form, the following projects have received attention by this division:

"*Bilibid Prison and Bilibid Hospital.*—In July, 1907, provision was made for the disposal of surface drainage from the space contained within the new wall surrounding the addition to the prison grounds to be occupied by the new hospital.

"In April, May, and June, 1908, work progressed on the new plans for a sewer system to connect with the new sanitary sewers now nearing completion for the city of Manila.

"In view of the many changes in the detailed location of the main and branch sewers, as well as changes in the location of many of the numerous closet systems themselves, entirely new plans have been drawn for this project.

"The estimated cost (for material only) for these systems is as follows:

"Bilibid Prison	₱26,418.67
"Bilibid Hospital	5,558.47
"Total	31,977.14

"The above amounts are based on the assumption that water connections will be made with the city mains. If it is later decided to drill an artesian well, the additional cost for the well and pump it is estimated will be as follows:

"Cost of well complete	₱5,000.00
"Cost of pump	200.00
"Total	5,200.00

"The cost of tanks has not been included as it is understood that several of large capacity are now on hand at Bilibid.

"It is the understanding that the cost of the plumbing installations for the hospital is covered by the general appropriation for that purpose.

"For the general installation an appropriation of ₱40,000 has been made by the Commission for the construction of iron beds for the prisoners and for the sewer installation, and it is understood that considerably more than half of the ₱40,000 appropriated will be available for the sewer system.

"*Pasig inspections.*—In August a report on the sanitary condition of the town of Pasig was submitted in connection with the monthly report. In addition a plan of a tight sanitary vault for the new high school was prepared for the guidance of the town officials.

"*Pasay.*—In August and September an attempt was made to improve the sanitary condition of this suburb of Manila. As it is outside of the city limits, however, the ordinary laws in force in the city of Manila could not be taken advantage of and the town officials of San Antonio, of which Pasay is a barrio, were requested and have passed certain sanitary regulations for the town.

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"*Culion.*—The construction work done at Culion has already been reported on to some extent under the heading 'Culion leper colony division.' However, a few additional facts of interest are given herewith: The cost of the construction of the residence for the physician at Culion was ₱4,722.77, and that of the warehouse ₱5,932.55.

"The new road constructed from Balala to Culion has a maximum grade of 2 per cent, and is 1,700 feet long. The present minimum width is 4 feet, but this can be increased to any width which the future needs of the colony may require. The cost of this work was approximately ₱500.

"The new hospital referred to in Culion report was commenced under the supervision of the chief, sanitary engineering division, during February, but on March 23, he being ordered to Manila, the work was turned over to the chief of the colony.

"During March surveys were made, and in April a preliminary study of a new street and park system for Culion was submitted.

"*Cavite.*—Plans of the following sanitary systems were sent to the district health officer of Cavite: Septic absorbing, discharging vault; absorbing discharging catch basin; double suction, filter-discharging catch basin; tight vault for houses of two stories; privy with tight vault; floor drain.

"*Lingayen, Pangasinan.*—An estimate of the cost of installing a town well at Lingayen was submitted in May, 1908.

"*Provincial jail, Tacloban, Leyte.*—During October and November, 1907, plans were acted on and recommendations were made for a provincial jail at Tacloban, Leyte. The regular design of septic vault designed for use in the city of Manila was used as a basis for a septic vault for the prison; the only change necessary was in the dimensions of the same.

"*Floor drain.*—As an improvement on the old style bell-trap cesspool, a new style floor drain has been designed and approved by the director of health for use in the city of Manila.

"In addition to the above specified work, including that mentioned in the tables[a] published in the appendix, a great deal of verbal information and instruction on sanitary matters has been given out by the chief of the division, it being the endeavor to aid the public in every way possible on all sanitary matters."

A tabulated record of the work done in Manila may be found in the statistical part of this report.[a]

SAN LAZARO HOSPITALS DIVISION.

This division is made up of the cholera, plague, smallpox, leper, insane, opium habit, morgue and crematory, and miscellaneous departments.

The number of patients remaining at the close of the last annual report was 308; during the year there have been 934 admitted; 676 discharged, 13 transferred; 207 died, and 5 escaped. This leaves 347 patients to be carried over as remaining in the various departments June 30, 1908.

Cholera hospital.—In the cholera department there were admitted 128 male and 65 female patients, of whom 18 males and 4 females were discharged as not having cholera, thus reducing the actual number of cholera cases admitted to 171 patients, of whom 43 males and 60 females were discharged as cured, and 67 males and 39 females died, making the percentage of deaths of those admitted only about 59. Deducting the number of those who arrived at the hospital too late for treatment, the percentage of cures was about 43. The mortality in Manila during the epidemic of 1902 averaged about 80 per cent.

The treatment now employed, in outline, consists of:

Stimulation with strychnine sulphate, tincture of digitalis hypodermically, and the infusion of digitalis by the mouth, the latter being particularly useful in the reactionary stages of the disease, as it is both a stimulant and diuretic.

As a sedative stimulant, a tablet composed of morphine sulphate, digitalis, and hyoscine is used with good results in cases in which the condition of the stomach will tolerate this form of medication. The indication for quick relief in arterial spasms is best met by nitroglycerine.

Vomiting is treated by the administration of a tablet composed of cocaine, nux vomica, and capsicum, if the stomach is not too irritable.

Those cases in which there is marked shrinkage of the tissues, yet a fairly good heart action, are most favorable for the intravenous injection of normal

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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salt solutions. It has been found that where the heart is very weak and the respiration labored such treatment seems to hasten death by promoting pulmonary congestion.

During the stage of convalescence all food except milk and eggs should be withheld for a considerable time and the closest attention paid to the kidneys. Absolute rest is enjoined throughout the whole course of treatment.

Plague hospital.—In the plague pavilion there was only one case of this disease treated, and this was taken from the steamship *Ferd Laeisz*, which arrived here from Hongkong with the sick man aboard.

Smallpox hospital.—The admissions to this department were more numerous than during the previous year. The cases occurred mostly among the unvaccinated. There were admitted 200 cases, of which 42 died, giving a mortality of 21 per cent. These figures, however, do not show the real incidence of the disease this year, because among them are included 20 cases of varioloid from Bilibid, which were extremely mild on account of successful vaccination. By excluding these cases the mortality rises to 23⅛ per cent.

Leper hospital.—The following tabular statement will show the principal statistics of the leper department:

Race.	In hospital July, 1907.		Admitted.		Discharged.		Escaped.		Died.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Filipinos	126	88	13	6	2	1	.....	3	22	15	115	75
Chinese	2	.....	2	.....	2	.....	.....	.....	.....	.....	2	.....
Total	128	88	15	6	4	1	.....	3	22	15	117	75

These patients have been as contented as usual; the regular fiesta of San Lazaro took place in April, 1908, and the usual large crowd attended. The treatment with the X-ray went on throughout the year, and the patients treated either improved or remained the same. All were found positive microscopically in November, 1907; and in June, 1908, all were again found positive, with the exception of one case.

Insane hospital.—At the close of the last annual report there were 76 male and 15 female insane patients remaining in the insane department. There have been admitted since that date 70 males and 12 females. There have been discharged as cured 32 patients, and 17 have died, thus leaving in the hospital at the close of the fiscal year 105 male and 20 female patients, the majority of whom are from the provinces. The city patients are usually committed to the Hospicio de San José.

The number of patients in this department was as follows:

Race.	In hospital July 1, 1907.		Admitted.		Discharged.		Died.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Americans	5	.....	6	.....	10	.....	.....	.....	1	.....
Europeans	2	.....	.....	.....	.....	.....	.....	.....	2	.....
Filipinos	65	16	60	12	14	6	14	2	97	20
Chinese	2	.....	1	.....	.....	.....	.....	.....	3	.....
Others	2	.....	3	.....	2	.....	1	.....	2	.....
Total	76	16	70	12	26	6	15	2	105	20

There were no deaths from any unusual or epidemic diseases, most of them being old cases of simple mania or simple melancholia, merging into terminal dementia. There was one death due to pulmonary tuberculosis and one sudden death from an organic heart lesion.

Practically all cases improve after entrance, especially as regards their physical condition, on account of the regular meals and the effect of the treat-

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ment and care, and freedom from irritation. As a rule the mental condition undergoes considerable improvement also, and in many cases cures are effected. From the foregoing figures it will be noted that the percentage of recoveries is fully as large as in similar institutions in the United States and Europe, where experts, specially trained in the treatment of nervous diseases, are employed.

The majority of patients in this department would, perhaps, come under the head of harmless insane, but as there is no one to look after them outside, it is impossible to release them. On the other hand, there have been received a good many criminal insane, including a considerable number of murderers, from Bilibid Prison, and while, in some cases, these patients appear normal as regards all ordinary actions, still it is a responsibility not to be undertaken lightly to set free a patient once found to be afflicted with homicidal mania.

The insane have been used in the work of the hospital throughout the year, particularly in gardening. A considerable number of vegetables have been raised, and during the coming year this amount is expected to be largely increased. The vegetables are particularly welcome at the present time when the cost of so many articles of subsistence has advanced, making it especially hard to keep the daily average within the limit allowed.

It was mentioned in the last annual report that the new insane ward was nearly ready for occupancy. This ward was occupied in August and has proved satisfactory in every way. A few improvements have been made; a ridge of cement was laid around the bathrooms and closets to prevent the water from running out on the floor of the wards, and grated iron doors were installed in the place of the outside doors, which were found to be not strong enough.

The female insane now occupy the ward formerly occupied by the males, and an entrance directly from the ward to the dining room has been made so that the women do not need to leave the ward for any purpose.

The women have, as usual, done a large amount of sewing for the patients in the different departments.

Opium hospital.—During February, 1908, the opium-habit patients were transferred from the San Juan de Dios to the San Lazaro Hospital. There were 383 male Chinese admitted; 365 were discharged as cured, while of the 14 male and 3 female Filipino patients received, only two men and one woman remain.

The duration of the treatment is limited by law to 60 days, but the actual time required to effect a cure in favorable cases is much less than this. These cases as a rule have been discharged as cured after being held about 10 days without opium. They have practically all been released in good physical condition, and in such a state that it would be possible to quit the habit for good with comparatively little effort if there exists a desire to do so.

Some cases have been reduced gradually, but the greater part can be separated from their opium at once.

A certain amount of stimulation is used and some bromide given. There have been no deaths and very little serious illness consequent on the withdrawal of opium.

Morgue and crematory.—In the morgue and crematory departments there were 123 autopsies, 21 cremations, 371 pauper burials, and 184 family burials.

Cremation is not popular in the Philippine Islands except among the Japanese, who always dispose of their dead in this way. It should be stated that this method is also growing in favor among the Americans.

Miscellaneous diseases.—The classification miscellaneous includes tetanus, measles, and diphtheria cases. The statistics show that there were 6 tetanus cases, with 4 deaths and 2 recoveries. Of measles there were 25 cases, with no deaths, and 5 cases of diphtheria, with 2 deaths and 3 recoveries. The embarrassment which has heretofore been felt in handling these cases will shortly be relieved by the construction of a new ward, an appropriation of ₱30,000 for this purpose having been made by the legislature.

A large part of the opposition to the enforced hospitalization of dangerous communicable diseases has been overcome by a policy which permits the immediate relatives of patients to visit them in the hospital, and in cases of serious illness to remain with them. These privileges are subject to such restrictions and regulations as may be necessary to protect the public health. The effect has been to gain the confidence of the people and is undoubtedly aiding in preventing the hiding of cases, which so largely prevailed in the early days.

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DIVISION OF STATISTICS.

The division of statistics is the oldest division of the bureau, being the successor of the office of the secretary of the board of health, and was organized by the provost marshal general before the establishment of civil government. This division is charged with collecting, classifying and preparing for publication the vital statistics of the Philippine Islands.

Within the last few years a very complete system of municipal and provincial statistical reports has been introduced, but owing to the scarcity of physicians in the remote districts, the data are necessarily very defective, hence the published statistics are principally those of the city of Manila.

The provincial reports are carefully worked over and will be valuable for comparison later on. The international system of nomenclature is used exclusively and has been a valuable help in placing the work on a uniform basis.

The provincial and municipal reports are more comprehensive than would ordinarily be required, if it were not for the fact that they are maintained as much for the educational value as for statistical purposes.

The tables published in the appendix to this report will show the scope and character of the duties of this division.

The credit of whatever has been accomplished is justly due to the chief of the division, Dr. Manuel Gomez, who has had charge of this important work, first as secretary of the board of health, and, later on, when the bureau was organized, as chief of the division, since the establishment of the first American board of health in the Philippine Islands.

SUMMARY.

The following are a few of the results accomplished during the year:

1. There were vaccinated by the systematic method 1,686,757 persons, and over 400,000 were revaccinated in communities where it was especially necessary, thus making a total of over 2,000,000 persons protected from the danger of smallpox. These figures do not include vaccinations in the army, navy, constabulary, and other public services.

2. Owing to the benefits of leper segregation, at least 300 less people contracted the disease this year than formerly.

3. At least 25 towns have been provided with artesian wells, as the result of the constant agitation by this bureau for better water supplies. They will probably save at least 20 lives for each 1,000 who use the water from them.

4. The search for a remedy for the cure of leprosy has been persistently carried out during the year, and apparently by the continuation of the work which has been done formerly by this bureau means have been found in certain select cases to at least stop the further progress of the disease in an individual, and in some cases apparently to accomplish a cure, such as has been done in the case reported under the head of "X-ray treatment of leprosy," on page 106.

5. There were made upon poor persons in the city of Manila 41,896 professional visits; 26,000 prescriptions were filled, and medical and surgical aid was given in every province throughout the Philippine Archipelago.

6. There were transferred to Culion 1,554 lepers.

7. After overcoming almost insurmountable obstacles the first reenforced concrete building with a floor space of 3,264 square feet was completed, a large hospital was well started at the Culion leper colony, and enough nipa buildings were completed to increase the capacity of the colony from 1,000 to 1,500.

8. A large part of the work of furnishing the data for the plans for the hospitals at Baguio, at Manila, at Bilibid, and at the Culion leper colony was done by this office.

9. The cholera measures which were carried out no doubt resulted in this disease not becoming pandemic in the Philippines.

10. Medical, surgical, and administrative attendance was furnished in 9 different hospitals, which have a daily average of over 1,100 patients, or 401,500 hospital days per annum, and relief was furnished to at least 5,000 persons who were not required to remain in the hospital.

11. Sanitary supervision of buildings, streets, vehicles, plumbing, licenses, administration of the food and drugs act, and many other things too numerous to mention engaged the attention of the bureau every day of the year.

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POLICY.

The efforts of the bureau during the year were directed more and more toward the laying of a sound foundation upon which to erect a sanitary superstructure that will endure. The efforts of the earlier years of modern health work in the Philippines were necessarily restricted to battling with actual outbreaks of great devastating diseases like cholera, plague, and smallpox, rather than with the conditions which made these diseases possible. In other words, symptoms had to be treated rather than causes. Persons actually suffering with cholera had to be cared for rather than to install a permanent system of water supply which would make a cholera outbreak impossible at a later day. The resources of the islands are such at present that greater sums than those set aside during the past few years are not available. It has, therefore, become the policy of the bureau to take each peso that becomes available for health work and vaccinate, say 40 people with it, thus protecting them against smallpox; or to free a certain number of individuals of intestinal parasites, thus saving them from many other diseases; or to invest it with others in artesian wells; rather than use it for sweeping sidewalks, penning up pigs, or cleaning back yards. All of these latter measures are highly desirable, but when there is only sufficient money to accomplish every needful thing, it would seem that there is but one course to pursue, and that is to invest it in those things which will give the greatest permanent result.

This policy has given rise to considerable adverse criticism, which time only can counteract. In the future the permanent results will speak for themselves. The achievements of the reduction in the number of cases of smallpox and leprosy, and the lowered mortality where artesian wells are in use, are already beginning to attract attention, and will soon demonstrate the superiority of this new departure over the old empirical "clean up" policy.

Briefly, then, it is believed that the direct road to the goal of a permanent low morbidity and mortality rate in the Philippine Islands is through improved water supplies, vaccination, elimination of intestinal parasites, systematic warfare against tubercle bacilli, the eradication of the malarial mosquitoes, and through improved hygiene to combat infant mortality.

RECOMMENDATIONS.

In addition to the work already being done, it is recommended:

1. That in view of the fact that the elimination of the intestinal parasites of the residents of the Philippine Islands bids fair to save a large number of lives, steps should be taken to accomplish this work and render conditions such that reinfection will not occur. To bring this about, a system for the disposal of night soil should be inaugurated, preferably by the oriental method whereby this substance is used for fertilizing mulberry trees, from which a profit may be realized instead of an additional burden upon the taxpayers.

2. That the sum of ₱25,000 be set aside for the building of a few small isolating pavilions and for the treating therein of a limited number of tubercular cases, and that an outdoor dispensary be established in the city of Manila at which only persons afflicted with tuberculosis be treated; one of the principal objects of such a dispensary to be its use as a means of diffusing knowledge of the home treatment of this disease and the precautions that should be taken in order not to infect others.

3. That at least 3 provincial hospitals with a capacity of 30 beds each be provided; the initial cost of each to be about ₱30,000.

4. That a committee of 5 physicians be named to make a further study of the causes of the excessive infant mortality with the view of reducing the same.

5. That an extensive laboratory study be made of cholera, with a view of ascertaining the exact cause of the appearance and disappearance of the cholera spirilli in the Philippine Islands.

6. That the question of a law to provide for the care of the insane be considered by the next legislature.

Very respectfully,

VICTOR G. HEISER,
Passed Assistant Surgeon, United States Public Health and Marine-Hospital Service, Director of Health.

THE SECRETARY OF THE INTERIOR,
Manila, P. I.

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STATISTICAL TABLES—BUREAU OF HEALTH.

GENERAL STATISTICS.[a]

Population of the city of Manila.

[Health census of 1907.]

Nationality.	Population.
Americans	5,199
Filipinos	195,292
Spaniards	2,903
Other Europeans	977
Chinese	18,028
All others	1,143
Total	223,542

[a] Unless otherwise stated these statistics are for the fiscal year ended June 30, 1908.

Births reported.[a]

Nationality.	Male.	Female.	Total.	Annual average per 1,000.
Americans	58	44	102	19.61
Filipinos	4,427	4,060	8,487	43.45
Spaniards	20	20	40	13.77
Other Europeans	9	9	18	18.42
Chinese	15	10	25	1.37
All others	2	.....	2	1.74
Total and average	4,531	4,143	8,674	38.80

[a] Incomplete.

Births and deaths, by districts, and annual rate per 1,000.

Health districts.	Population.	Births.	Annual rate per 1,000.	Deaths.	Annual rate per 1,000.
No. 1, Intramuros	30,649	997	32.52	1,191	38.85
No. 2, Meisic	82,397	2,255	27.36	2,315	28.09
No. 4, Sampaloc	35,475	1,747	49.25	1,687	47.55
No. 5, Tondo	53,855	2,600	48.27	3,297	61.21
No. 6, Paco	21,166	1,075	50.78	861	40.67
Total and average	223,542	8,674	38.80	9,351	41.83

Number of deaths and death rate per 1,000 among residents, by nationalities.

Nationality.	Number of deaths.	Annual average per 1,000
Americans	51	9.80
Filipinos	8,409	43.36
Spaniards	50	17.22
Other Europeans	17	17.40
Chinese	337	18.69
All others	21	18.37
Total and average	8,945	40.01

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A classified report of all deaths occurring in Manila, including transients.

Males.	Number.	Females.	Number.
Married	966	Married	702
Widowers	260	Widows	489
Single	848	Single	265
Boys	3,106	Girls	2,654
Condition not stated	45	Condition not stated	16
Total	5,225	Total	4,126
Grand total			9,351

Stillbirths	335
Number of deaths with medical attendance	4,919
Number of deaths without medical attendance	4,432
Total	9,351

Deaths, by age, including transients.

Age.	Number.	Age.	Number.
Under 30 days	994	40 years to 50 years	509
30 days to 1 year	3,190	50 years to 60 years	438
1 year to 2 years	756	60 years to 70 years	250
2 years to 5 years	586	70 years to 80 years	181
5 years to 10 years	226	80 years to 90 years	111
10 years to 15 years	112	90 years to 100 years	38
15 years to 20 years	292	Over 100 years	19
20 years to 25 years	398	Unknown	17
25 years to 30 years	466		
30 years to 40 years	768	Total	9,351

Comparative mortality from January 1, 1901, to June 30, 1908.

Months.	1901.		1902.		1903.		1904.	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
January	753	a 36.25	760	a 36.58	602	a 28.98	796	b 42.64
February	689	a 36.72	706	a 37.63	511	a 27.23	709	b 40.59
March	885	a 42.66	770	a 37.06	539	a 25.94	751	b 40.23
April	886	a 44.07	1,327	a 66.01	549	a 27.31	748	b 41.40
May	903	a 43.47	1,688	a 81.26	770	a 37.06	766	b 41.03
June	621	a 30.89	1,418	a 70.54	592	a 29.45	800	b 44.28
July	608	a 29.27	2,223	a 107.02	620	b 33.21	866	b 46.39
August	702	a 33.79	1,712	a 82.42	862	b 46.17	1,032	b 55.28
September	767	a 38.15	1,132	a 56.31	1,228	b 67.97	1,064	b 58.89
October	855	a 41.16	927	a 44.62	1,217	b 65.19	1,018	b 54.53
November	848	a 42.18	1,035	a 51.48	974	b 53.91	957	b 52.97
December	858	a 41.30	753	a 36.25	894	b 47.89	794	b 42.53
	9,375	38.30	14,451	59.04	9,358	40.27	10,301	46.83

a Death rate computed on population of 244,732 (health department's census).
b Death rate computed on population of 219,941 (official census, 1903).

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Comparative mortality from January 1, 1901, to June 30, 1908—Continued.

Months.	1905.		1906.		1907.		1908.	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
January	685	[a] 36.69	737	[a] 39.47	632	[b] 33.31	1,117	[b] 58.87
February	608	[a] 36.05	595	[a] 35.28	473	[b] 27.59	733	[b] 41.29
March	563	[a] 30.15	600	[a] 32.13	464	[b] 24.45	720	[b] 37.94
April	530	[a] 29.32	555	[a] 30.27	416	[b] 22.65	626	[b] 34.09
May	526	[a] 28.16	600	[a] 32.13	462	[b] 24.35	633	[b] 33.34
June	593	[a] 32.81	693	[a] 36.72	402	[b] 21.89	678	[b] 36.92
July	747	[a] 40.00	1,451	[a] 77.72	515	[b] 27.14	.....	.....
August	841	[a] 45.03	1,182	[a] 63.31	653	[b] 34.41	.....	.....
September	1,013	[a] 56.06	835	[a] 46.22	768	[b] 41.82	.....	.....
October	850	[a] 45.51	684	[a] 36.64	877	[b] 46.22	.....	.....
November	944	[a] 52.24	653	[a] 36.14	725	[b] 39.48	.....	.....
December	841	[a] 45.03	597	[a] 31.98	900	[b] 47.43	.....	.....
	8,741	39.74	9,182	41.07	7,287	32.59	.....	.....

[a] Death rate computed on population of 219,941 (official census, 1903).
[b] Death rate computed on population of 223,542 (health census, 1907).

Comparative mortality with same period of previous years.

	First quarter.		Second quarter.		Third quarter.		Fourth quarter.	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
1901	2,327	42.93	2,410	43.97	2,077	37.49	2,561	46.22
1902	2,236	41.25	4,433	80.89	5,067	91.46	2,715	49.00
1903	1,652	30.48	1,911	34.87	2,710	48.91	3,085	55.68
1904	2,256	41.16	2,314	42.22	2,962	53.46	2,769	49.98
1905	1,856	34.24	1,649	30.09	2,601	46.94	2,635	47.56
1906	1,932	35.64	1,848	33.72	3,468	62.59	1,934	34.90
1907	1,569	28.48	1,280	22.98	1,936	34.38	2,502	44.42
1908	2,570	46.14	1,937	34.77	.....	.....	.....	.....

Report of action taken on licenses.

Business for which license is desired.	License applications approved.	License applications disapproved.	Total applications acted upon.
Liquor:			
First-class bars	58	.....	58
Second-class bars	67	2	69
First-class bars and restaurants	30	1	31
Second-class bars and restaurants	22	.....	22
Wholesale	32	.....	32
Groceries	76	.....	76
Theaters	1	.....	1
Druggists	3	.....	3
Hotels	22	.....	22
Restaurants	584	80	664
Boarding houses	15	2	17
Lodging houses	11	.....	11
Distilleries	4	.....	4
Native wines	2,258	35	2,293
Breweries	1	.....	1
Auctioneers	4	.....	4
Clubs	28	.....	28
Cooked foods, fruits, vegetables, and soft drinks	2,105	85	2,190
Bakeries	4	.....	4
Manufactures	159	18	177
Livery stables	12	.....	12
Barber shops	280	5	285
Laundries	13	1	14
Tattooers	7	.....	7
Dance halls	20	2	22
Theaters	14	.....	14

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Report of action taken on licenses—Continued.

Business for which license is desired.	License applications approved.	License applications disapproved.	Total applications acted upon.
Billiard and pool tables	139	3	142
Pawnbrokers, junk shops, and second-hand goods	38	3	41
Ferryboats	3	.....	3
Carrillos	13	.....	13
Candies, sweetmeats, cakes, etc	5	.....	5
Cinematographs	3	.....	3
Ice cream	4	7	11
Slot machines	3	.....	3
Dying and cleaning clothes	14	.....	14
Whole stock yard	1	.....	1
Shooting gallery	1	.....	1
To sell sugar cane	.....	1	1
Bill-posting and street-advertising agency	3	.....	3
Foundry	5	.....	5
Public warehouse	1	.....	1
Three additional vehicles	1	.....	1
Total	6,054	245	6,309

Reports received of lepers living in the various provinces of the Philippine Islands.

Provinces.	Race.	Males.	Females.	Children.		Single.		Married.		Widowers.	Widows.	Total.
				Males.	Females.	Males.	Females.	Males.	Females.			
Abra	Filipino.	3	2	.....	.....	2	1	1	1	.....	.....	5
Albay	...do....	2	3	.....	.....	2	2	.....	1	.....	.....	5
Bataan	...do....	16	8	1	.....	9	2	4	3	2	3	24
Batangas	...do....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
Benguet [a]	...do....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
Bulacan	...do....	30	17	.....	1	17	9	10	5	3	2	47
Cagayan	...do....	39	41	1	.....	13	15	21	13	4	13	80
Cavite	...do....	51	28	3	2	28	19	18	5	2	2	79
Cebu	...do....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
Cullon	(b)	840	493	151	71	391	238	256	139	42	45	1,333
Ilocos Norte	Filipino.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	128
Ilocos Sur	...do....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
Iloilo	...do....	7	5	1	.....	4	2	2	2	.....	1	12
Isabela	...do....	8	2	.....	.....	2	.....	6	2	.....	.....	10
La Laguna	...do....	30	18	.....	5	16	8	11	3	3	2	48
Lepanto-Bontoc	...do....	16	13	.....	.....	11	9	4	4	1	.....	29
Misamis [a]	...do....	43	21	4	.....	20	13	17	6	2	2	64
Negros Occidental	...do....	1	1	.....	.....	1	1	.....	.....	.....	.....	2
Negros Oriental	...do....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Nueva Ecija [a]	...do....	32	15	1	.....	11	4	16	8	4	3	47
Pampanga	...do....	16	7	2	1	5	2	6	3	3	1	23
Pangasinan	...do....	44	27	1	1	11	6	21	14	11	6	71
Rizal	...do....	41	25	4	3	23	7	14	15	.....	.....	66
Tarlac	...do....	24	14	.....	1	4	5	18	8	2	.....	38
Tayabas	...do....	16	4	2	.....	7	2	7	2	.....	.....	20
Union	...do....	35	14	.....	.....	10	7	19	5	6	2	49
Zambales	...do....	21	26	.....	.....	2	6	14	11	5	9	47
San Lazaro Hospital	(c)	117	75	15	10	58	31	35	20	9	14	192
Total	.....	1,433	859	186	95	648	389	500	270	99	105	2,488

[a] Revised report not received.
[b] Filipinos, 1,330; Chinese, 2; Europeans, 1; total, 1,333.
[c] Filipinos, 190; Chinese, 2; total, 192.

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Reports received of insane persons living in the various provinces of the Philippine Islands.

Provinces.	Race.	Males.	Females.	Children.		Single.		Married.		Widowers.	Widows.	Total.
				Males.	Females.	Males.	Females.	Males.	Females.			
Abra	Filipino.	16	7	.....	.....	14	3	2	1	.....	3	23
Albay	...do.....	30	50	1	.....	20	29	7	14	2	7	80
Ambos Camarines	...do.....	41	45	.....	1	29	31	10	9	2	4	86
Antique	...do.....	30	35	.....	.....	21	19	8	12	1	4	65
Bataan	...do.....	16	11	.....	.....	7	4	8	1	1	6	27
Batangas	...do.....	59	47	1	.....	42	32	13	6	3	9	106
Bohol	...do.....	279	280	11	7	209	212	50	45	9	16	559
Bulacan	...do.....	37	24	.....	.....	21	13	12	6	4	5	61
Cagayan	...do.....	17	15	.....	.....	12	8	3	4	2	3	32
Capiz	...do.....	65	68	.....	1	44	30	14	18	7	19	133
Cavite	...do.....	38	33	.....	.....	22	21	11	7	5	5	71
Cebu	...do.....	177	109	23	16	128	75	24	9	2	9	286
Ilocos Norte	...do.....	70	28	.....	.....	54	16	12	9	4	3	98
Ilocos Sur	...do.....	88	49	1	.....	63	32	18	14	6	3	137
Iloilo	...do.....	85	68	1	.....	64	40	14	15	6	13	153
Isabela	...do.....	9	6	.....	.....	4	1	5	5	.....	.....	15
La Laguna	...do.....	43	41	.....	.....	26	20	13	8	4	13	84
Lepanto-Bontoc	...do.....	2	3	.....	.....	2	2	.....	1	.....	.....	5
Leyte [a]	...do.....	34	17	3	.....	27	13	3	4	1	.....	51
Masbate [a]	...do.....	7	6	1	1	5	5	1	.....	.....	.....	13
Mindoro [a]	...do.....	9	7	.....	.....	8	4	1	2	.....	1	16
Misamis	...do.....	69	64	4	.....	46	35	14	17	5	12	133
Negros Occidental	...do.....	60	37	.....	.....	42	19	15	11	3	7	97
Negros Oriental	...do.....	64	47	.....	.....	49	38	11	4	4	5	111
Nueva Ecija [a]	...do.....	22	23	.....	1	18	13	3	7	1	2	45
Nueva Vizcaya [a]	...do.....	4	5	.....	.....	4	1	.....	3	.....	1	9
Pampanga	...do.....	40	31	.....	.....	28	15	12	8	.....	8	71
Pangasinan	...do.....	98	83	2	.....	53	39	30	31	13	13	181
Rizal	...do.....	39	22	.....	.....	29	16	5	3	5	3	61
Romblon	...do.....	4	.....	.....	.....	2	.....	2	.....	.....	.....	4
Samar [a]	...do.....	32	28	.....	.....	24	19	4	4	4	5	60
Sorsogon	...do.....	90	70	2	2	67	50	20	9	1	9	160
Surigao [a]	...do.....	9	10	.....	.....	5	6	2	2	2	2	19
Tarlac	...do.....	9	8	.....	.....	4	5	5	2	.....	1	17
Tayabas	...do.....	120	105	5	3	88	72	23	18	4	12	225
Union	...do.....	42	32	2	5	18	15	17	11	5	1	74
Zambales	...do.....	8	9	.....	.....	7	3	1	3	.....	3	17
Hospicio de San Jose [b]	...do.....	62	67	.....	.....	.....	.....	.....	.....	.....	.....	129
San Lazaro Hospital	(c)	105	20	.....	.....	69	11	27	7	9	2	125
Total	.....	2,029	1,610	57	37	1,375	967	420	330	115	209	3,639

[a] Revised report not received.
[b] Supported by the government.
[c] American, 1; Europeans, 2; Filipinos, 117; Chinese, 3; others, 2; total, 125.

Reports received of blind persons living in the various provinces of the Philippine Islands.

Provinces.	Race.	Males.	Females.	Children.		Single.		Married.		Widowers.	Widows.	Total.
				Males.	Females.	Males.	Females.	Males.	Females.			
Abra [a]	Filipino.	44	55	2	.....	10	15	18	22	14	18	99
Albay [a]	...do.....	365	301	73	67	177	150	84	47	31	37	666
Ambos Camarines [a]	...do.....	136	116	8	16	64	46	42	19	22	35	252
Antique [a]	...do.....	72	59	9	4	28	23	20	10	15	22	131
Bataan	...do.....	19	16	.....	.....	9	10	5	2	5	4	35
Batangas [a]	...do.....	92	88	15	7	32	38	32	10	13	33	180
Bohol	...do.....	211	160	37	16	109	82	47	29	18	33	371
Bulacan [a]	...do.....	122	82	14	6	44	35	37	17	27	24	204
Cagayan [a]	...do.....	51	64	3	4	15	14	18	13	15	33	115
Capiz [a]	...do.....	108	109	7	5	30	39	43	17	28	48	217
Cavite	...do.....	74	47	6	5	25	18	29	8	14	16	121
Cebu [a]	...do.....	344	294	40	22	152	133	106	58	46	81	638
Ilocos Norte [a]	...do.....	90	107	5	1	21	36	37	18	27	52	197
Ilocos Sur [a]	...do.....	114	132	13	15	38	37	40	29	23	51	246

[a] Revised report not received.

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Reports received of blind persons living in the various provinces of the Philippine Islands—Continued.

Provinces.	Race.	Males.	Females.	Children.		Single.		Married.		Widowers.	Widows.	Total.
				Males.	Females.	Males.	Females.	Males.	Females.			
Iloilo[a]	Filipino.	229	235	28	14	92	89	69	31	40	101	464
La Laguna	...do....	77	49	12	4	25	18	24	10	16	17	126
Leyte[a]	...do....	326	195	64	22	168	95	57	29	37	49	521
Masbate[a]	...do....	32	35	2	2	14	13	12	7	4	13	67
Misamis[a]	...do....	71	48	6	4	43	21	14	12	8	11	119
Negros Occidental	...do....	165	104	5	6	54	30	46	24	60	44	269
Negros Oriental[a]	...do....	142	103	14	15	57	34	36	15	35	39	245
Nueva Ecija[a]	...do....	43	42	3	3	16	13	12	9	12	17	85
Pampanga	...do....	92	70	11	9	45	30	26	11	10	20	162
Pangasinan[a]	...do....	166	183	12	15	63	47	64	43	27	78	349
Rizal	...do....	99	77	1	2	40	30	42	16	16	29	176
Romblon[a]	...do....	33	27	6	2	11	14	11	8	5	3	60
Samar[a]	...do....	133	69	.....	.....	67	29	32	20	34	20	202
Sorsogon	...do....	202	123	27	17	118	77	46	18	11	11	325
Surigao[a]	...do....	37	26	6	2	14	6	12	12	5	6	63
Tarlac[a]	...do....	47	36	1	1	17	10	22	8	7	17	83
Tayabas[a]	...do....	101	84	.....	.....	.....	.....	.....	.....	.....	.....	185
Union[a]	...do....	59	46	3	2	19	9	21	14	16	21	105
Zambales	...do....	9	4	.....	.....	5	1	3	1	1	2	13
Total	.....	3,905	3,186	433	288	1,622	1,242	1,107	587	642	985	7,091

[a] Revised report not received.

Smallpox and plague report for Manila.

Nationality.	Smallpox.				Plague.			
	Cases.		Deaths.		Cases.		Deaths.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Americans	7	2	3	.....	.....	.....	.....	.....
Filipinos	113	84	34	37	.....	.....	.....	.....
Foreigners	2	1	.....	.....	.....	.....	.....	.....
Chinese	4	.....	2	.....	.....	.....	.....	.....
Total	126	87	39	37	.....	.....	.....	.....

District and age.	Smallpox.		Plague.	
	Cases.	Deaths.	Cases.	Deaths.
Health districts:				
No. 1, Intramuros	20	7	.....	.....
No. 2, Meisic	76	23	.....	.....
No. 4, Sampaloc	14	7	.....	.....
No. 5, Tondo	96	35	.....	.....
No. 6, Paco	7	4	.....	.....
Total	213	76	.....	.....
Ages:				
Under 1 year	11	6	.....	.....
1 year to 10 years	114	51	.....	.....
10 years to 20 years	43	7	.....	.....
20 years to 30 years	29	5	.....	.....
30 years to 40 years	12	5	.....	.....
40 years to 50 years	3	1	.....	.....
Over 50 years	1	1	.....	.....
Total	213	76	.....	.....

Number of cases found alive	176
Number of cases found dead	37
Total	213

NOTE.—Two of the deaths are outside cases brought to San Lazaro Hospital.

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Cholera report, City of Manila.

Nationality.	Cases.		Deaths.	
	Male.	Female.	Male.	Female.
Americans	8	3	1	1
Filipinos	225	161	194	143
Foreigners	11	2	7	2
Chinese	18	.....	17	.....
Total	262	166	219	146

District and age.	Cases.	Deaths.
Health districts:		
No. 1, Intramuros	79	66
No. 2, Meisic	138	115
No. 4, Sampaloc	73	63
No. 5, Tondo	102	91
No. 6, Paco	36	30
Total	428	365
Ages:		
Under 1 year	1	1
1 year to 10 years	72	66
10 years to 20 years	56	44
20 years to 30 years	143	118
30 years to 40 years	84	73
40 years to 50 years	42	35
Over 50 years	30	28
Total	428	365

Number of cases found alive	186
Number of cases found dead	242
Total	428

NOTE.—Two of the deaths are cases from Pangasinan Province.

Cholera in the provinces.

Province.	Cases.	Deaths.	Mortality.
			Per cent.
Pangasinan	2,826	1,815	64.22
Leyte	149	129	85.57
Capiz	673	508	81.42
Bataan	23	20	86.95
Bulacan	177	131	74.01
Nueva Ecija	1	1	100.00
Cavite	26	24	92.30
Laguna	4	3	75.00
Pampanga	379	313	82.58
Ilocos Sur	4	2	50.00
Zambales	220	156	70.86
Union	62	45	72.58
Rizal	177	146	82.48
Benguet	1	.....	.....
Tarlac	18	11	61.11
Mindoro	32	20	62.50
Total	4,772	3,324	69.65

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Number of patients treated for the cure of opium habit.

Place.	Nationality.	Remaining from previous years.	Admitted during year.	Recovered.	Improved.	Not improved.	Remaining at close of year.
San Lazaro	Chinese		383	365	18		18
	Filipinos		17	14	3		3
	Others		1	1			
	Total		401	380	21		21
San Juan de Dios	Chinese		223	63	[a] 2		158
	Filipinos		36	34			2
	Others						
	Total		259	97	2		[b] 160
Mission, Iloilo	Chinese			3	3		
	Filipinos						
	Others						
	Total			3	3		
Cebu	Chinese		27	27			
	Filipinos		37	37			
	Others		1	1			
	Total		65	[c] 65			
Grand total			725	542	26		181

[a] Escaped, 1; discharged better, 1.
[b] Transferred to San Lazaro for treatment.
[c] Relapsed after leaving hospital.

BAGUIO HOSPITAL DIVISION.

Miscellaneous statistics.

Number of cases treated from July 1, 1907, to June 30, 1908	2,291
Number of cases treated during same period of 1906 to 1907	1,635
Increase over previous years	656
Per cent of increase	40.6
Number of days spent in hospital by all patients	3,340
Average number of days per patient	13.68
Number of surgical dressings from July 1, 1907, to June 30, 1908	2,316
Numerical increase over previous year	1,106
Per cent of increase	91.4
Number of surgical operations from July 1, 1907, to June 30, 1908	200
Numerical increase over previous fiscal year	157
Per cent of increase	365
Number of prescriptions filled from July 1, 1907, to June 30, 1908	2,397
Numerical increase over previous fiscal year	403
Per cent of increase	20.1
Number of revisits (daily clinic) from July 1, 1907, to June 30, 1908	2,604
Numerical increase over previous fiscal year	1,250
Per cent of increase	92.3
Number of constabulary examinations for enlistment, etc	14
Number of autopsies performed	3

Average cost of subsistence per person per day, including patients and employees, etc., of the Baguio Hospital division.

Month.	Cost.	Month.	Cost.
1907:		1908:	
July	₱0.827	January	₱0.694
August	.9023	February	.699
September	.805	March	.725
October	.6995	April	.883
November	.712	May	.876
December	.828	June	.678

1908. Net average cost per person per day for twelve months, ₱0.7822.
1907. Net average cost per person per day for twelve months, ₱0.8589.

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Culion Leper Colony Division.

Status.	Europeans.		Filipinos.		Chinese.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	
Remaining July 1, 1907	1		489	248	1		739
Admitted			1,054	499	1		1,554
Born			9	9			18
Discharged			6	1			7
Escaped			11	2			13
Died			698	260			958
Remaining	1		837	493	2		1,333

REPORT OF SAN LAZARO HOSPITALS.

Opium habit department.

Status.	Chinese.	Filipinos.	Others.	Total.
In hospital at last report				
Admitted	383	17	1	401
Recovered	365	14	1	380
Improved	18	3		21
Not improved				
Remaining	18	3		21

Opium habit department, by race.

Race.	In hospital July 1, 1907.	Admitted.	Recovered.	Improved.	Remaining.
Chinese		383	365	18	18
Filipinos		17	14	3	3
Others		1	1		
Total		401	380	21	21

FINANCIAL STATEMENT.

The following statement shows the expenditures made during the fiscal year 1908 chargeable against the appropriation made by Act No. 1679 for the bureau of health during that period:

Amount appropriated	₱1,280,000.00	
Allowed by secretary of the interior to be expended from receipts to the bureau of health	88,000.00	
Total		₱1,368,000.00

Expenses chargeable as follows:

General—	
Salaries and wages	109,608.42
Transportation in Manila	15,446.82
Photographs	231.15
Commutation of leave	12,416.32
Traveling expenses, employees	5,068.44
Repairs	77.70
Stationery	2,398.39
Printing	15,385.79
Postage and telegrams	2,296.56
Periodicals	96.74
Cablegrams	244.23
Incidentals	1,689.50

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Expenses chargeable as follows—Continued.		
General—Continued.		
New furniture	₱575.76	
Miscellaneous, property division	17,011.54	
Rent, sanitary stations	220.00	
Post-office box	32.00	
Telephone rent	865.94	
Incidentals, sanitary stations	1,614.00	
Disinfecting apparatus	3,382.63	
Central free dispensary	1,527.03	
Asilio de S. Vicente de Paul	1,328.25	
Colegio de Sta. Isabel	4,305.26	
Hospicio de S. José	40,191.05	
Medicines, indigent persons	3,376.19	
Transportation of freight	1,469.69	
Board of examiners	721.83	
Incidentals, central free dispensary	251.47	
		₱241,832.70
Emergency Fund:		
Salary	1,924.57	
Serum	223.75	
		2,148.32
Inspection division:		
Salaries and wages	97,906.76	
Traveling expenses	7,222.50	
		105,129.26
Prison sanitation division:		
Salaries and wages	7,274.31	
Medicines and medicinal supplies and disinfectants	6,853.08	
		14,127.39
Culion leper colony division:		
Salaries and wages	18,520.05	
Subsistence, employees	43,304.24	
Subsistence, employees	10,908.33	
Equipment, kitchen	251.05	
Equipment, hospital	2,431.85	
Medicines and medical supplies	672.33	
Stationery and office supplies	2.20	
Fuel, etc	909.07	
Construction	18,012.72	
Incidentals	485.06	
Gratuity to lepers	7,002.20	
Bedding, towels, etc., lepers	8.45	
Clothing	1,658.34	
		104,165.89
Collection of lepers		16,409.01
Benguet Sanitarium division:		
Salaries and wages	7,003.54	
Subsistence	3,394.41	
Medicines and surgical supplies	650.51	
Hospital equipment	2,765.70	
Incidentals	485.28	
Laundry	413.40	
Fuel	571.46	
		15,284.30
St. Lazaro Hospital division:		
Salaries and wages	37,755.91	
Subsistence	44,634.04	
Medicines	2,678.78	
Shoeing ponies and forage	722.14	
Telephone rent	173.25	
Lights	3,152.50	
Bedding	470.80	
Soap	1,120.42	
Incidentals	2,985.22	
Cigarettes, tobacco, etc	191.47	

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St. Lazaro Hospital division—Continued.		
Gratuity to lepers	₱1,938.40	
Clothing, lepers	1,167.42	
New furniture	138.60	
Transportation	9.00	
Towels	63.80	
Fuel	1,531.90	
		₱98,733.65
Civil Hospital division:		
Salaries and wages	53,498.11	
Subsistence	48,989.71	
Coal and oil	869.05	
Rent of buildings	10,299.93	
Telephone	260.41	
Laundry	6,560.16	
Lights	4,153.26	
Medicines and surgical supplies	5,471.50	
Repairs	1,000.01	
Miscellaneous general supplies	5,546.77	
Incidentals	289.23	
Forage and horseshoeing	501.00	
Extra transportation	2.00	
		137,441.14
Vaccinating division:		
Salaries and wages	54,254.21	
Antiseptic supplies and dressings	4,675.36	
Vaccine virus	26,304.20	
Ice for virus	408.54	
Traveling expenses for vaccinators	4,837.07	
		90,479.58
Grand total		825,751.24

In addition to the foregoing statement of actual expenditures made from funds appropriated in Act No. 1679 there are the following outstanding obligations chargeable to the appropriation of the bureau and funds appropriated for same during the fiscal year 1908:

Salaries and wages	₱63.67	
Transportation in Manila	1,433.00	
Photographs	.60	
Traveling expenses, employees	1,837.19	
Stationery	151.82	
Postage and telegrams	136.80	
Incidentals	1,288.21	
Miscellaneous, property division	12.21	
Rent, sanitary stations	20.00	
Telephone rent	87.40	
Disinfectants and apparatus	148.50	
Central Free Dispensary	82.19	
Asilo de S. Vicente de Paul	120.75	
Colegio de Sta. Isabel	325.00	
Hospicio de San José	3,572.90	
Medicines, indigent persons	50.95	
Transportation of freight	642.81	
Board of examiners	704.00	
Incidentals, Central Free Dispensary	85.04	
		₱10,763.04
Emergency fund:		
Salary	165.00	
Serum	16.50	
		181.50
Inspection division:		
Salaries and wages	6,499.97	
Traveling expenses	4,379.91	
		10,879.80
Prison sanitation division:		
Medicines and medical supplies and disinfectants		896.97

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Culion Leper Colony division:		
Salaries and wages	₱950.00	
Subsistence, employees	3,651.35	
Equipment, kitchen	198.49	
Equipment, hospital	2,794.67	
Medicines and medical supplies	2,268.38	
Fuel, etc	330.00	
Construction	15,620.31	
Incidentals	1,166.36	
Gratuities to lepers	2,216.60	
Bedding, towels, etc., lepers	661.20	
Clothing	2,853.53	
Freight	353.55	
		₱33,064.44
Collection of lepers		36,243.00
Benguet Sanitarium division:		
Salaries and wages	771.00	
Subsistence	1,333.06	
Medicines and surgical supplies	2,280.49	
Hospital equipment	1,415.84	
Incidentals	148.48	
Laundry	30.60	
Fuel	40.00	
		6,019.47
San Lazaro hospitals division:		
Salaries and wages	203.33	
Subsistence	3,414.22	
Medicines	191.99	
Shoeing ponies, and forage	90.90	
Telephone rent	15.75	
Lights	303.30	
Bedding	391.50	
Soap	108.79	
Incidentals	1,852.10	
Cigarettes, tobacco	68.20	
Gratuity to lepers	124.20	
New furniture	56.63	
Transportation	8.00	
Towels	1.70	
Fuel	1,210.80	
		8,041.41
Civil Hospital division:		
Salaries and wages	255.00	
Subsistence	4,013.15	
Coal and oil	138.00	
Rent of buildings	872.50	
Telephone	26.00	
Laundry	560.67	
Lights	460.80	
Medicines and surgical supplies	1,658.53	
Repairs	77.83	
Miscellaneous general supplies	587.80	
Forage and horseshoeing	4.50	
Extra transportation	70.05	
		8,724.83
Vaccinating division:		
Salaries and wages	3,959.00	
Antiseptic supplies and dressings	693.30	
Vaccine virus	1,401.50	
Ice for virus	39.25	
Traveling expenses, vaccinators	4,234.82	
		10,327.87
Total		125,142.33

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The following amounts as credits to this appropriation were collected during the year:

Refund by provinces of salaries of district health officers	₱52,563.41	
Sales of medicines, demijohns, empty vaccine tubes, refund of transportation of Doctor Swezy, etc	3,004.16	
Miscellaneous collections, San Lazaro	1,196.25	
Miscellaneous collections, Culion Leper Colony	1,037.79	
Miscellaneous collections, Civil Hospital	24,991.70	
Miscellaneous collections, Baguio Hospital	4,802.00	
		₱87,595.31
Total expenditures for fiscal year 1908		825,751.24
Total liabilities		125,142.33
Total		950,106.57
Balance from appropriation, fiscal year 1908		417,106.43
Balance fiscal year 1907		159,134.74
Total available		576,241.17

Cases and deaths from cholera in the Philippine Islands from the beginning of the outbreak in 1902 to January 1, 1908.

[Cholera statistics taken from paper by Dr. Victor G. Heiser, published in Philippine Journal of Science, April, 1908.] [a]

Date.	Cases.	Deaths.
March 2, 1902, to March 8, 1904	166,252	109,461
March 8, 1904, to January 1, 1908	11,691	8,654
Total	177,943	118,115

[a] Brought up to date.

Mortality, 74.03 per cent.

Cases and deaths from cholera in the city of Manila, January 1, 1906, to January 1, 1907.

BY AGES.

Age.	Cases.	Deaths.	Mortality.
Under 30 days	1	1	100
1 month to 2 years	39	36	92.3
2 to 5 years	121	116	95.9
5 to 10 years	54	50	92.6
10 to 15 years	56	43	76.8
15 to 20 years	97	75	77.3
20 to 25 years	112	96	85.7
25 to 30 years	113	100	97.4
30 to 35 years	71	57	80.3
35 to 40 years	61	55	90.2
40 to 45 years	24	22	91.3
45 to 50 years	35	32	91.4
50 to 55 years	18	17	94.4
55 to 60 years	22	22	100
60 to 65 years	5	5	100
65 to 70 years	11	11	100
70 to 75 years	2	1	50
75 to 80 years	3	3	100
80 to 85 years	1	0	0
85 to 90 years	2	2	100
Over 90 years			
Total and average	848	744	87.7

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Cases and deaths from cholera in the city of Manila, January 1, 1906, to January 1, 1907—Continued.

BY RACE.

Race.	Cases.	Deaths.	Mortality.	1 case to—	Date last case.
Americans	12	9	75	488	Sept. 4, 1906
Filipinos	782	698	89.3	243	Nov. 17, 1906
Chinese	30	27	90	741	Oct. 12, 1906
Foreigners	24	10	41.7	189	Nov. 27, 1906

Cases and deaths from cholera in the city of Manila, January 1, 1907, to January 1, 1908.

BY AGES.

Age.	Cases.	Deaths.	Mortality.
Under 30 days			
1 month to 2 years	6	6	100
2 to 5 years	14	13	92.85
5 to 10 years	15	14	93.33
10 to 15 years	12	10	83.33
15 to 20 years	21	14	66.66
20 to 25 years	30	28	93.33
25 to 30 years	40	32	80
30 to 35 years	26	24	92.30
35 to 40 years	21	20	95.23
40 to 45 years	16	13	81.25
45 to 50 years	8	8	100
50 to 55 years	7	7	100
55 to 60 years	3	1	33.33
60 to 65 years	2	2	100
65 to 70 years	2	2	100
70 to 75 years			
75 to 80 years			
80 to 85 years			
85 to 90 years			
Over 90 years			
Total	223	194	86.99

BY RACE.

Race.	Cases.	Deaths.	Mortality.	1 case to—	Date last case.
Americans	3	0	0.0	1,733	Oct. 17, 1907
Filipinos	212	186	87.7	921	Dec. 31, 1907
Chinese	4	4	100	4,507	Oct. 19, 1907
Foreigners	4	4	100	1,255	Oct. 9, 1907
Total	223	194	86.9	1,002	

NOTE.—Detailed statistical tables on the following subjects have been omitted from this appendix and filed in the Bureau of Insular Affairs, War Department:

Births, by districts and sex, legitimate and illegitimate.

Births, by districts, according to number of children borne by mother.

Number of deaths, with causes, among permanent and transient residents of Manila.

Number of deaths, with cause, by nationality, sex, and age.

Deaths by occupations.

Sick and wounded poor attended by municipal physicians.

Prescriptions filled at municipal dispensary.

Permits issued for disposition of dead bodies.

Disinterments.

General inspection of houses, vaults, etc., with improvements ordered, disinfected, whitewashed, cleaned, etc.

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Report of disinfections.
Operations of pail conservancy system.
Report of crematories and morgue.
Medical inspection of schools.
Systematic vaccinations and vaccine virus distributed.
Report of sera.
Chinese hospital sick report.
Baguio hospital division — cases treated.
Sickness and death, with causes, in Bilibid prison.
Sick report of Iwahig, penal colony.
Medical, surgical, obstetrical, and gynecological cases, civil hospital division.
Average cost of subsistence per day, Culion leper colony.

Sanitary orders issued, obeyed, canceled, disapproved, and uncompleted; also prosecutions for failure to comply with orders of the sanitary engineering division; plans for new buildings approved; personnel of the division.

Statistics for San Lazaro hospitals division as to number of patients admitted and treated, average cost of subsistence, cholera, insane, leper, plague, smallpox, morgue, and miscellaneous departments.

Cholera statistics arranged in order in which the towns became affected, from January 1, 1906, to June 30, 1908.

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APPENDIX B.

REPORT OF THE CHIEF QUARANTINE OFFICER.

UNITED STATES TREASURY DEPARTMENT,
PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE, CHIEF QUARANTINE OFFICER FOR THE PHILLIPPINE ISLANDS,
Manila, P. I., July 20, 1908.

SIR: I have the honor to submit the following report of the transactions of the bureau of quarantine service for the Philippine Islands for the fiscal year ended June 30, 1908:

QUARANTINE EFFECTIVE.

Although the Philippines were in frequent communication with foreign countries which were badly infected, so far as known, no quarantinable disease was introduced therein during the year. The efficacy of modern quarantine measures, as applied under the provisions of the "United States Quarantine Laws and Regulations," not only in preventing the introduction of dangerous communicable diseases and at the same time causing very slight delay and interference with the shipping interests, was perhaps best shown by preventing the reintroduction of plague into the Philippine Islands, in spite of the fact that it occurred in epidemic form in China, which is within a few days' sailing distance of Manila, and vessels arrive from there almost daily. In addition to the foregoing, the disease was present in India, the Straits Settlements, Indo-China, Japan, and Australia, all of which are countries that are in direct communication with the Philippines. The strict measures which are insisted upon at the port of departure have, no doubt, contributed largely to this successful issue.

Although cholera was present at times in almost epidemic form in Manila, the measures taken with outgoing interisland vessels were entirely successful in preventing the introduction of the disease into other islands, with one exception, and in this instance it was probably carried to the sparsely inhabited island of Lubang in some foodstuffs that were surreptitiously taken aboard after the quarantine inspection was completed.

Results of this kind show that even though the work is done in the heart of the Orient, amidst the most unfavorable surroundings, yet they could have been no more successful under more favorable conditions.

PERSONNEL.

Passed Asst. Surg. Victor G. Heiser, chief quarantine officer for the Philippine Islands. Manila: Passed Asst. Surg. Victor G. Heiser, in command; Passed Asst. Surg. T. B. McClintic, Passed Asst. Surg, A. J. McLaughlin, chief clerk, and Cashier N. C. Comfort. Mariveles: Asst. Surg. Frank H. McKeon. Iloilo: Asst. Surg. Joseph Pettyjohn. Cebu: Passed Asst. Surg. R. E. Ebersole. Zamboanga: Acting Asst. Surg. H. H. Johnson. Jolo: Acting Asst. Surg. H. D. Snyder. Cavite: Acting Asst. Surg. D. N. Carpenter. Olongapo: Acting Asst. Surg. C. P. Kindleberger. Total personnel, including employees, 83.

CHOLERA.

The service has again rendered valuable aid in preventing the introduction of this rapidly spreading and fatal disease from Manila to the other islands of the archipelago. The great number of lives that have been saved on this account alone is simply inestimable and in striking contrast with the conditions prevailing prior to American occupation.

PLAGUE.

The steamer *Ferd Laeisz* arrived here from Hankow, China, which is about 300 miles inland, on the Yangste Kiang River, via Hongkong, with one of the crew suffering with symptoms resembling those of plague. The man, who was said to have been shipped at the port of Hongkong, was promptly transferred

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to the San Lazaro Plague Hospital, where a definite diagnosis of plague, based upon laboratory findings, was made. The vessel was sent to the Mariveles quarantine station, and the measures required by the quarantine regulations were rigorously carried out, after which the vessel was detained for seven days. No further cases occurred.

RATPROOF WHARVES.

The expensive harbor improvements in Manila, which are now nearing completion, include the first wharves suitable for deep-seagoing merchant vessels that have been constructed in the Philippines. It was soon recognized that these wharves present a distinct sanitary menace to the islands, in that they will afford much easier means for rats to reach the shore. When it is remembered that very many of the vessels that will come alongside are from badly infected plague ports, it may readily be seen that the service is confronted with a most difficult problem, upon the successful solution of which will largely depend the prevention of the introduction of plague in the future.

In order to meet this difficulty, the engineer in charge has arranged to connect the main wharf with the shore by a bridge, part of which can be lifted at night and at other times when not in use, so as to prevent the escape of rats to the shore. The structure beneath the floor of the wharves is also built smooth, so that rats can not gain a footing. Vessels of this kind will also be frequently fumigated in order to reduce the rats to the smallest possible number.

SMALLPOX.

The terrible epidemics of smallpox which occurred in some of the nearby foreign countries, and, more especially, in the seaports of Japan, were responsible for no less than two vessels arriving at Manila and three at Cebu with this disease aboard. After thorough vaccination and rigid disinfection, no further cases occurred.

The vaccination of the crews of the interisland vessels which has been so persistently carried out during the past five years is, no doubt, responsible for the fact that no case occurred thereon during the year.

LEPROSY.

As the work of the insular government to segregate all lepers in the Philippines at the Culion leper colony nears completion, the quarantine inspections of interisland commercial vessels reveal less and less of these unfortunates. The service has, however, come into direct contact with this question by disinfecting the government vessels which have been employed in transferring the lepers to Culion. These disinfections have been most thoroughly carried out, and are made upon the principle that the infection may be transmitted by direct contact with portions of the vessel, or articles or textiles which have been touched by the lepers; or that the leper bacillus may be conveyed by vermin. For this latter purpose, sulphur is used.

VESSELS BOARDED.

There were boarded and inspected at Manila, 3,096 incoming vessels; at Iloilo, 993; at Cebu, 1,833; and at the other ports, 189.

VESSELS DISINFECTED.

There were disinfected—62 vessels at Manila, 1 at Zamboanga, and 3 at Cebu. There were disinfected 5 vessels on account of smallpox, 1 on account of cholera, 1 on account of plague, 8 on account of being employed in transporting lepers, and the remainder because they came from infected ports, or were proceeding to the United States.

FUMIGATION OF VESSELS.

Fumigation once in every six months of all vessels engaged in the interisland trade has been continued. Vessels from Saigon in the rice and cattle trade and vessels from the China coast are also frequently fumigated. There were fumigated 99 vessels at Manila, 46 at Iloilo, and 17 at Cebu.

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CARGO.

Similar regulations to those previously enforced were in effect during the year.

OUTGOING QUARANTINE.

Consular bills of health were issued to 104 vessels, of which 20 were partially disinfected and 10 were fumigated throughout. Of the army transports bound from the Philippines to the United States, 12 were partially disinfected, their crews and steerage passengers bathed and their effects and baggage disinfected. During the year 43,350 pieces of baggage were disinfected, 44,763 pieces passed after inspection, 414,586 pieces of cargo were investigated and passed, and 2,117 pieces disinfected.

RESTRICTIONS MODIFIED.

As the health conditions in the Philippines have been improving from year to year, it has been possible gradually to reduce the quarantine restrictions which were imposed upon vessels at the outset. During the last month of the year vessels arriving at one port in the Philippine Islands from another port therein that was not infected were exempt from awaiting inspection prior to their discharging passengers, cargo, or crew, provided the master of such a vessel would certify that no case of sickness had appeared aboard within five days of the time of his arrival, and that his vessel was in a sanitary condition. An inspection, however, is made of each vessel as soon as it reaches the wharf, in order to determine whether the data furnished is correct. While this change has greatly facilitated business, yet the amount of work performed by the service has not been essentially lessened.

SMALLER PORTS OF ENTRY.

A recent law which became effective July 1, 1908, has created Davao, a port situated on the east side of the island of Mindanao, a port of entry. Although but few vessels, and these only freight ships, will probably make this a port of call, yet Davao is situated upon one of the largest islands of the archipelago, and is in direct connection with many of the principal trade routes, so that there would be considerable opportunity for the spread of quarantinable disease if it was once introduced.

It is also most desirable to have the quarantine inspection at ports of entry uniform, otherwise it might offer a favorable opportunity to introduce prohibited cargo and evasions of the immigration law.

Negotiations are now under way with a view to having a medical officer of the constabulary act as quarantine officer at this port.

The arrangement entered into some years ago to have medical officers of the army or navy act as quarantine officers at the smaller ports has continued to give excellent satisfaction, and has done much to facilitate commerce.

MAINTENANCE OF BUILDINGS AND EQUIPMENT.

The rapid deterioration of buildings, wharves, vessels, etc., that takes place in the Tropics can scarcely be appreciated by those who have not had actual experience with these conditions. The ravages of the teredo cause the complete destruction of piles of the hardest woods within three years, the dry rot destroys ordinary planking in about two years, and the white ants, within a comparatively short time, may cause the destruction of entire buildings.

Owing to the limited amount of expert assistance available, and the great distance of the islands from the United States, the quarantine officer is left with many technical problems to solve for which his medical training probably did not fit him, and which properly belong to other branches of the Government, but, confronted by the stern necessity of the situation, it is very much to his credit that he has not only met them, but met them successfully. The condition of the property under the control of the service in the Philippines compares favorably with that of any other branch of the Government, and the cost of maintaining it has been most reasonable.

During the coming year the replacing of the 400 feet of wharf of the Mariveles quarantine station with heavily impregnated creosoted timber will be nearly completed, after which this structure should last for many years.

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The creosoted timber wharf at the Cebu quarantine station has now been in place for more than three years, and, as yet, shows no signs of deterioration. Considerable labor and material, however, will be required both at Mariveles and Cebu to keep the station buildings in good condition.

The disinfecting barge *Proteccion* was temporarily transferred to the bureau of health for use at the Culion leper colony, which will relieve the service for a time, at least, of its maintenance. Considerable work was done in constructing small outbuildings, making repairs, and beautifying the grounds of the several stations. At the Mariveles quarantine station the bureau of public works submitted bills for repairs to the wharf to the amount of ₱2,912.13, which were paid out of the current appropriations for contingent expenses.

NEW DISINFECTING PROCESS.

In the report recently issued by the Japanese quarantine authorities, it is stated that considerable success has been had by generating formaldehyde by the ordinary potassium method in a tight room into which steam is admitted in limited quantities. Owing to the large number of hats, shoes, belts, knapsacks, camp equipment, and many other things which are likely to be infected, but which are injured by the steam disinfecting process, a method of this kind, if reliable, would be of inestimable help in carrying out the quarantine work in the Philippine Islands. With this end in view at the close of the year, a room for this purpose is actually in process of construction, and it is hoped that full results may be available for next year's report.

DYSENTERY CONTRACTED ABOARD SHIPS.

The service has been able to render excellent aid during the year in combating dysentery which, no doubt, many persons have contracted while traveling upon interisland vessels. Many of the ships' water tanks had become thoroughly infected with amoeba. In order to correct this condition, a number of years ago a propaganda was started, which has been persistently fostered, with the view of having all interislands vessels install aboard a distilling apparatus, in order that sterile drinking water could be furnished. These are now gradually being introduced, and the good results are already apparent. In the meantime vessels are sent to the Mariveles quarantine station where the tanks are thoroughly cleansed and disinfected with permanganate of potassium.

PURCHASE OF SUPPLIES.

The selecting and purchase of supplies of the service to the amount of ₱18,768.45 was accomplished during the year. In view of the fact that the Philippines are almost 10,000 miles away from a good market, this becomes not an inconsiderable part of the duties of the officer in charge. Considerable foresight must be exercised in ordering supplies fully a year in advance of the time that they are needed.

AID TO OTHER SERVICES.

1. *Board of marine examination.*—The service conducted the physical examinations of applicants for license as masters, mates, and engineers on vessels registered in the Philippine Islands. The local law requires a full physical examination, such as given cadets and officers in the Revenue-Cutter Service. During the year 198 were examined, of whom 166 were passed, and 32 were rejected.

2. *Immigration.*—At the ports of entry of the Philippine Islands the service officers inspected during the year 7,856 aliens, and certified 51 as being afflicted with excludable diseases or conditions which would affect their ability to earn a living. Of the number certified, 37 were deported, 1 escaped, 4 were subsequently landed, and 9 remain awaiting decisions of appeals, or deportation.

3. *Bureau of health.*—For the bureau of health, hides, animal food products, etc., were inspected and certified for landing or shipment; ships, launches, and lighters in port were disinfected to prevent the spread of disease, and water transporation was supplied to carry out sanitary measures on river and bay. There were disinfected 9 vessels on account of having carried lepers to the Culion leper colony.

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4. *Bureau of education.*—A number of students bound for the United States, at either government or private expense, were given a rigid physical examination at the request of the director of education.

5. *Bureau of navigation.*—Physical examinations of officers and men were made to determine their fitness for promotion or for positions in the coast guard service. Cutters and launches were disinfected and fumigated, and crews vaccinated.

6. *Coast and geodetic survey.*—Physical examinations were made of employees of that service.

7. *Bureau of posts.*—The post-office officials were given every aid possible, both at Manila and Mariveles; during the outgoing quarantine large quantities of mail were handled daily by service employees in order to insure prompt dispatch.

8. *Light-house service.*—A light was maintained on Mariveles Bay, supplies being furnished by the light-house establishment, and the service superintending the care and maintenance of the light.

9. *Bureau of civil service.*—Special physical examinations were made of civil employees, or applicants for eligibility, when so requested by the director of civil service. A number of examination papers were examined and rated.

10. *Weather bureau.*—The service displayed storm signals on Mariveles Bay for the weather bureau, in accordance with advices received by wire from the director of the bureau. These signals at Mariveles have been a great aid to vessels, and are highly appreciated by the shipping interests.

11. *United States Army.*—A number of transports were disinfected upon request on account of measles or other communicable diseases occurring aboard. All were fumigated during the year to exterminate vermin. Launches and lighters were fumigated. Quarters at Mariveles were provided for over 4,000 United States soldiers for periods of from five to fifteen days while awaiting the sailing of the transports bound for the United States.

12. *Bureau of agriculture.*—Vessels which had carried diseased cattle were disinfected at the request of the director of agriculture.

IMMIGRATION.

Immigration to the Philippine Islands since the Russo-Japanese war has shown no particular tendency to increase. The rejections on account of disease were practically the same as last year.

Owing to the medical provisions of the United States immigration laws being made applicable to Chinese persons beginning January 1, 1907, an anomalous condition of affairs was produced. At the time the law went into effect 5,000 or more Chinese persons who had been residents of the Philippine Islands, many of them for thirty years or more, were absent on a visit to China. When they attempted to return here, great numbers of them were advised not to embark on account of the fact that they were afflicted with trachoma and other diseases which come under the provisions of the immigration laws. Many of the Chinese felt that they had not been given sufficient warning that trachoma, for instance, would prevent them from returning to the islands, and many claimed that if they had known this they would not have left the islands at all, and that it was a great hardship to be deprived of returning to their families, to their property, and also what, in many instances, they regarded as their homes. The Chinese from the Amoy district were particularly affected, and as persons who had been advised not to embark gradually increased in numbers in and about Amoy, the dissatisfaction naturally increased, and considerable resentment was shown against the United States. During the month of March it was estimated that over 3,000 such persons had gathered at Amoy alone. These facts were brought to the attention of the insular government, and upon the request of the governor-general of the Philippine Islands, Passed Asst. Surg. Victor G. Heiser proceeded to Amoy March 28, 1908, for the purpose of ascertaining whether some of the large number of aliens who were refused passage on account of trachoma could not be admitted into the Philippine Islands. Upon investigation it was found that many of them were afflicted with an eye affection which resembled trachoma, but in which a definite diagnosis could not be made until they had either been under medical treatment or prolonged observation. This period had expired for a great many persons, and others in the meantime had undergone successful treatment, and on that account it was possible to recommend for passage a large number of persons who had heretofore been refused transportation. This

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action did much to restore confidence and relieve, temporarily at least, a very acute condition.

At Amoy it was learned that it has been customary in the past for American consuls to appoint a so-called consular surgeon, to whom, in some cases, a definite salary was paid by the consul, the consulate then collecting from each alien who desired to go to the Philippine Islands, or other American territory, a fee, the total of which is said to have amounted to large sums. This collection of fees produced considerable criticism, and cast serious reflection upon American methods in the Orient. At the present time a private physician makes the medical examination, and a fee is paid to him direct by the alien who desires to embark. In view of the suspicion with which the medical examination as at present conducted in Amoy is regarded, the question of detailing a regular service medical officer for such duty there has been receiving consideration, both by the United States and insular governments. In addition to the appointment of such officer from a purely immigration standpoint, it also would have additional advantages, because Amoy is one of the great plague centers of the world, and if cargo, passengers, and baggage could be properly supervised before shipment to the United States or its territories, the quarantine restrictions which are at present imposed could no doubt be greatly modified.

During the fiscal year ended June 30, 1908, there were 7,864 arriving aliens inspected by officers of the Public Health and Marine-Hospital Service at the several ports of entry in the Philippine Islands. Of this number, 7,018 were inspected at Manila with 46 rejections, 222 at Iloilo with 1 rejection, 145 at Cebu with 4 rejections, 307 at Zamboanga with no rejections, 172 at Jolo with no rejections.

Of the 51 certified during the year and the 45 remaining over from the former fiscal year there were deported 40, escaped 2, landed on account of the supposed alien being able to establish citizenship 12, and 42 remain in the islands awaiting court decisions, or temporarily on bond until their business interests, sometimes very large, can be satisfactorily arranged.

The total number of inspections, 7,864, shows an increase of 156 over the past year. The number of inspections this year is greater than any year since the service began the medical inspection of arriving aliens in the Philippine Islands. The causes of rejection in the aliens certified during the year and those remaning from last year were: Trachoma 91, poor physique 1, hernia 1, senility 1, syphilis 2. Of these there remain to be carried into the new year, syphilis 1, trachoma 41. The percentage of rejections for the year was 0.0065.[a]

Summary of quarantine transactions, both incoming and outgoing, for the Philippine Islands, fiscal year ended June 30, 1908.

	Manila.	Iloilo.	Cebu.	Cavite.	Olongapo.	Zamboanga.	Jolo.	Total.
Vessels inspected	4,763	995	1,730	19	3	128	43	7,681
Vessels detained in quarantine	173	9	3	.....	.....	.....	.....	185
Vessels disinfected	62	.....	3	.....	.....	1	.....	66
Vessels fumigated to kill vermin	99	46	17	.....	.....	.....	.....	162
Bills of health issued	2,696	109	129	19	.....	.....	.....	2,953
Pieces of baggage disinfected	37,092	2,303	678	.....	.....	.....	.....	40,653
Pieces of baggage inspected and passed	44,740	1,406	23	.....	.....	.....	.....	46,169
Pieces miscellaneous cargo certified	214,586	81,579	118,421	.....	.....	.....	.....	414,586
Cases quarantinable diseases detected on vessels	3	.....	6	.....	.....	3	.....	12
Persons detained in quarantine	8,439	217	236	.....	.....	5	.....	8,997
Members of crews inspected	164,860	25,996	47,218	6,141	408	7,629	1,650	253,627
Passengers inspected	111,657	11,267	19,016	4	140	3,652	669	146,278
Persons vaccinated	1,993	30	122	.....	.....	.....	.....	2,145
Persons bathed and effects disinfected	17,725	.....	236	.....	.....	.....	.....	17,961

[a] Detailed tables showing the number of aliens inspected, certified, deported, and cause of deportation, at the ports of Manila, Iloilo, Cebu, Zamboanga, and Jolo, have been omitted, and are on file in the Bureau of Insular Affairs, War Department.

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FINANCIAL STATEMENT.

RECEIPTS AND EXPENDITURES, QUARANTINE-SERVICE APPROPRIATIONS, PHILIPPINE ISLANDS.

(A) GENERAL APPROPRIATION, BUREAU OF QUARANTINE SERVICE.

Balance, former fiscal year appropriations	₱37,290.10
Appropriation, Act No. 1679, fiscal year 1908	128,000.00
Collections, available for expenditure	4,601.01
Total available	169,891.11
Expended during the fiscal year 1908	113,474.89
Unexpended balance, June 30, 1908	56,416.22
Total	169,891.11

Outstanding liabilities (estimated), ₱50,000.

(B) APPROPRIATION FOR PUBLIC WORKS AND PERMANENT IMPROVEMENTS.

Balance appropriation, Act No. 1342	₱1,579.26
Unexpended balance	1,579.26
Total	1,579.26

Outstanding liabilities (estimated), ₱450.

EXPENDITURES.

DETAILS.

Compensation of personnel	₱69,762.75
Office and general service expenses	3,377.05
Launch and barge expenses	11,684.94
Station supplies and disinfectants	12,746.26
Repairs to buildings and wharves	14,416.40
New construction and new equipment	1,487.49
Total expenditures	113,474.89

EXPENDITURES BY STATIONS.

MANILA.

General service expenses	₱26,182.87	
Launch expenses	12,669.41	
New station equipment	127.73	
		₱38,980.01

MARIVELES.

General service expenses and supplies	28,450.20	
Repairs to buildings and wharves	14,270.53	
New construction and equipment	1,391.95	
		44,112.68

ILOILO.

General service expenses	5,771.43	
Launch and barge expenses	7,205.46	
		12,976.89

CEBU.

General service expenses	9,082.16	
Launch expenses	6,491.99	
Repairs to buildings, wharf, and reservation	249.97	
New construction and new equipment	1.19	
		15,825.31

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JOLO.

General service expenses	₱760.00	
		₱760.00

ZAMBOANGA.

General service expenses	820.00	
		820.00
Total expenditures		113,474.89

Respectfully submitted.

VICTOR G. HEISER,
Passed Assistant Surgeon,
Chief Quarantine Officer for the Philippine Islands.

To the SECRETARY OF THE INTERIOR,
Manila, P. I.

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APPENDIX C.

REPORT OF THE DIRECTOR OF FORESTRY.

DEPARTMENT OF THE INTERIOR,
BUREAU OF FORESTRY,
Manila, P. I., June 30, 1908.

SIR: I have the honor to submit herewith a report of the work of the bureau of forestry for the period July 1, 1907, to June 30, 1908.

The writer was absent from the Philippine Islands on leave from August 31, 1907, to April 4, 1908.

On April 22, 1908, the headquarters of the bureau of forestry were temporarily transferred to Baguio, Benguet, and remained there until May 23.

LEGISLATION.

During the past year the following legislation pertaining to this bureau was enacted:

Act No. 1735. Authorizing the free use of timber, etc., for any railway company to which a franchise might be given to build a railway line to Baguio, Benguet.

Act No. 1800. Amending section 9, Act No. 1407, the free-use law, and providing for the establishment of communal forests.

Act No. 1843. Amending Act No. 1519, which provides for the use of the metric system of weights and measures in the Philippine Islands, by providing for the continued use of the English system of weights and measures in the purchase and sale of manufactured lumber.

Act No. 1872. Amending section 9, Acts Nos. 1407 and 1800 (free-use and communal forest laws), providing for the free cutting and use of certain first-group timbers in buildings of strong materials.

In accordance with a request from this office, the attorney-general for the Philippine Islands, on December 31, 1907, rendered an opinion on the rights of homesteaders to the use of timber and other forest products on unpatented lands, an extract of which follows:

* * * * * * *

"I am of the opinion, in view of the above facts, that the cutting and removal of the timber and other forest products growing on the homestead land, except so far as necessary for residence upon and cultivation of the same by the applicant, should be regulated by the chief of the bureau of forestry, in conformity with the forestry act."

On April 22 the attorney-general for the Philippine Islands rendered an opinion of which the following is an extract:

* * * * * * *

"The above provision (citing subsection B, section 9, of Act 1407, as amended by Act 1800) amplifies the provisions of section 19 of Act 1148, and grants to any resident of the Philippine Islands permission to cut without license, for the period of five years, such timber (other than timber of the first group) and such firewood, resins, and other forest products, and stone and earth, as he may require for house building, fencing, boat building, or other personal use for himself or his family, but this can only be done in the public forest or in communal forest (in contradistinction to forest as to which an exclusive license has been issued), while the proviso of section 26 refers to the cutting and removing of timber and other forest products, stone, and earth, within a territory for which an exclusive license has been granted, which cutting and removing should be done under permission, and this right, under section 26, is limited to the residents within or adjacent to said territory, and for doing which a gratuitous license should be procured.

"The proviso of section 26 can not, therefore, be taken as in any way repealed by subsection B of section 9 of Act 1407, as amended by Act 1800, and I am of the opinion that no one who is not a resident within or adjacent to territory covered by an exclusive license can cut and remove timber therefrom, as the granting of the exclusive license contemplated by sections 13 and

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14 of Act 1148 vests a contractual right in the licensee of such a character as to preclude the idea that the commission intended Act 1800 to apply to those territories wherein it had authorized the issue of exclusive licenses. The right to cut timber without license, referred to in the above provisions of said Acts 1407 and 1800, should be in force outside of the territory for which an exclusive license has been granted."

From the above, it will be seen that residents in the vicinity of territory for which exclusive licenses have been granted must be provided with gratuitous licenses, should they desire timber free of charge for their own personal use. This enables the forest officers to exercise a more satisfactory management of forest tracts for which exclusive licenses have been granted.

Reports from forest officers and complaints from the large operators in the forest emphasize the need for some protection to certain forest tracts where much illegal cutting is practiced.

Section 13 of the forest act (No. 1148) provides as follows:

"The chief of the bureau of forestry, with the approval of the Secretary of the Interior, may, as herein provided, issue licenses for the cutting, collection, and removal of timber, firewood, gums, resins, and other forest products from the public forest reserves. Every license so issued shall specify in detail the rights to which it entitles the holder, and shall provide, whenever practicable, for exclusive territory in similar products to each licensee. All licenses for timber shall provide for the selection of said timber before cutting, provided that when absolutely necessary, the selection of timber or the granting of exclusive territory may, in the discretion of the chief of the bureau of forestry, be omitted in any license terminating not later than June 30, 1908, after which date the selection of timber and the granting of exclusive territory, whenever practicable, shall be required."

On account of the limited force of forest officers it will not be possible at this time to mark timber for felling throughout the islands. However, the marking of timber on forest tracts covered by license agreements will be inaugurated this year. Exclusive licenses will also be granted where special recommendations are made for the same and where the interests of residents desiring the free use of timber will not be prejudiced.

MARKET VALUE OF CERTAIN FOREST PRODUCTS.

In accordance with section 12 of the forest act, a joint committee from the bureau of forestry and bureau of internal revenue made an assessment of the market value of certain minor forest products, as follows:

Product.	Assessed market value per 100 kilos.	The following taxes at the rate of 10 per cent of their market values will be collected per 100 kilos.
Copal gum or gum mastic (Almaciga)	₱15.00	₱1.50
Gum elemi (Brea)	15.00	1.50
Gutta-percha (Gutapercha)	70.00	7.00
Rubber (Goma elastica)	70.00	7.00
Rattan (Bejuco)	10.00	1.00
Dyewood (Sibucao)	1.50	.15
Dye bark (Nigue)	5.00	.50
Tan bark (Cascalote)	3.00	.30
Charcoal (Carbon vegetal) per cubic meter	4.00	.40
Wood oils (Aceite de balao) per liter	.10	.01

The above assessment will be effective July 1, 1908, and will be subject to change on three months' notice.

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VISIT OF REPRESENTATIVE FROM JAVA.

In the early part of 1907 Doctor Treub, in charge of the botanical, agricultural, and forest departments at Buitenzorg, Java, made a short visit to the Philippine Islands. While here he expressed a desire to have a representative from the forest department of Java visit the Philippine Islands for the purpose of observing the American methods of logging and lumbering. He was informed that this bureau would assist his representative in making this investigation.

In December, 1907, Mr. Paul Kerbert, a forester in the employ of the Dutch government of Java, visited the islands, and was taken to various points by the foresters of this bureau, which included a two weeks' trip to the concession of the Insular Lumber Company in northern Negros, where he made observations on the conditions connected with steam logging in a comparatively level country. He also visited Baguio and Lamao.

A letter was received at this office after Mr. Kerbert's return to Java, in which Mr. Kerbert stated that he had in his report made the following recommendations: First, that the government of Java purchase two American logging donkey engines and employ an American expert logger to work in the teak forests in Java. Second, that the government have the forests of the wild and undeveloped island of Sumatra explored and investigated by American foresters, securing four of the latter from the Philippine bureau of forestry.

CARNIVAL EXHIBIT.

During the carnival, held in Manila February last, the bureau of forestry furnished an attractive and instructive exhibit of the forest resources of the Philippine Islands.

AGUSAN VALLEY.

Several reports are on file in this office relating, in a popular way, stories of the marvelous forest resources of the Agusan Valley, Mindanao. Forester W. I. Hutchinson was sent to this valley in May, 1907, to study its forest resources. He confined his studies to a tract some 2,000 square miles in area on the east side of the valley between the Tagabaca and Gibong rivers. It contains approximately 1,293,000 acres of timber land, and 27,000 acres of unwooded land, of which approximately 2,600 acres are under cultivation. Lumbering operations had never been carried on in this valley for other than local use. More than 80 per cent of the timber is soft wood, such as is now being logged profitably in Negros.

The report of the investigation by Forester Hutchinson is very interesting and instructive, and would be of much value in planning future investigations in this valley. One copy will be forwarded to the provincial government of Agusan.

FIELD WORK.

The field work of this service is carried on by the division of administration and the division of investigation. The field force of the division of the administration consists of 5 foresters, 6 assistant foresters, 8 rangers, and 1 temporary ranger. This division has charge of the supervision of all logging operations; in fact, it looks after all matters pertaining to the conservation and protection of our forest resources, regulates licenses, inspects public lands desired for homesteads, etc., and cooperates with the division of investigation in collecting botanical and other material, making durability tests, mapping, etc.

Good results were obtained during the year by the employment during the dry seaosn of Igorot fire wardens in northern Luzon. Large areas of pine land which in former years were swept by fire were protected, and as a result extensive areas are now covered by pine seedlings, which in about three years will be large enough to withstand the average light fires. The number of fire wardens will probably be increased during the coming year, and vigorous efforts made to extend the area under fire protection.

The forest officers in this division inspected during the year 448 cutting areas, which included practically all lumbering operations of importance.

In accordance with the provisions of law no public lands can be sold, leased, or homesteaded until they are certified by the bureau of forestry as more

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valuable for agriculture than for forest purposes. In accordance with this provision 2,583 parcels of public land were certified by this office, 52 of which were certified as more valuable for forest purposes and retained as public forest.

INSTRUCTION OF FILIPINO ASSISTANTS.

The foresters are taking much interest in the instruction of their Filipino assistants in the science of forestry, and very satisfactory progress has been made in this direction. After years of observation and elimination a field force of Filipino forest officers is being formed which promises well. At the close of the annual conference this year, this force will be convened in Manila for instruction in theoretical and practical forestry. A practical school of instruction will be started near the scene of logging operations of the Cadwallader Company in the province of Bataan, after which an examination will be held and each employee given a rating. In the future all applicants for the position of ranger will be given a technical examination. To prepare for such an examination the applicant will find it necessary to join a field force as a temporary ranger, and should his field service be considered satisfactory he will be allowed to take the prescribed examinations.

Personnel.—There are several technical positions vacant, and it appears to be a difficult matter to secure a transfer to our service of foresters from the United States. The graduates of the United States forest schools find attractive openings not only in the United States forest service, but also with large lumber and railroad companies, with the state governments, and in the leading colleges as instructors.

The vacancies in the Filipino field force will be filled gradually, as soon as suitable men capable of fulfilling the new requirements can be found. During the year the bureau has employed as temporary rangers a number of young Filipinos who have had good school training. Three to six months' field service will enable the foresters in charge of parties to judge of the capabilities of the various applicants, and will also afford each applicant sufficient time and experience to enable him to make up his mind whether or not he wishes to continue in this line of work.

Forester H. D. Everett, in charge of the forest district of the Visayas, and two Filipino rangers were treacherously murdered by wild mountain people while inspecting and mapping the forests of the Bayauan Mountains in southern Negros, about May 11, 1908.

DIVISION OF INVESTIGATION.

The scope of the work of this division, formerly known as the division of forest products, was enlarged early in the present fiscal year. Broadly speaking, it has for its object the investigation of the value and extent of the forest resources of the islands.

The field force in the division consists of 3 foresters, 3 assistant foresters, and 4 temporary rangers.

FOREST MAPS.

The plan of making a forest map of the islands, outlined in the last report, has been pushed with great vigor during the past year. Forest maps have been completed of a greater part of central and southern Luzon, of the island of Mindoro, and the Zamboanga peninsula of Mindanao; also of isolated areas of other parts of the islands. The importance of this land classification can not be overestimated. It will show definitely for each province the extent of the commercial forest, and of grass, parang, and cultivated areas. In short, it will be the basis of a more rational forest policy for the islands.

WORKING PLANS.

During the year the timber tract of the Port Banga lumber concession of the district of Zamboanga peninsula of Mindanao was investigated. This tract, covering approximately 137.5 square miles, was mapped in detail, and a large number of valuation surveys were made and other data collected preparatory to making a preliminary working plan. The results will be published in the form of a bulletin.

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MUSEUM AND HERBARIUM COLLECTIONS.

The museum at the close of the last fiscal year contained 826 numbers of wood samples, with 2,409 duplicate hand specimens for distribution. This year there have been added 1,459 numbers, and the museum, therefore, contains a total of 2,285 numbers. While a large number of duplicate hand specimens have been distributed, yet a larger number have been added, so that there are now in the museum 5,803 small samples ready for distribution. The number of species on hand at the close of last year was 336; there have been added this year 150, making a total of 486. With the aid of the bureau of science, by means of the wood and botanical specimens, the bureau of forestry has acquired the proper identification of a large number of arboreal species, including nearly all of the principal timbers found in the Manila market. However, the wood collections are far from being completed. Many unknown woods still come to the bureau for identification. As there are no authentic specimens of these, it is not possible to classify them. The recent demand of the railway companies for very durable timbers for railway ties is rapidly dimishing the supply of such woods as molave, ipil, yacal, and others. Many timbers of which little is known are, therefore, thrown on the market as substitutes. Some of these are apparently as good as those for which they are substituted, but others are undoubtedly inferior. Many such substitutes are brought to this bureau for identification, and in some instances can not be determined because authentic specimens are not in the present wood collection. Such collections will be made as soon as possible.

Ever since its organization the bureau of forestry has endeavored to increase the knowledge of the forest flora of the Philippine Islands by collecting specimens for the herbarium of the bureau of science. Up to July 1, 1907, there had been collected a total of 10,020 sheets. During the present fiscal year there have been turned over to the bureau of science 4,089 numbers, which make a total of 14,109 sheets credited to the bureau of forestry in the herbarium of the bureau of science. It is not too much to say that a large part of our knowledge concerning the scientific identity of the forest trees is based upon these collections. This work of identification, in charge of the botanist of the bureau of science, has progressed almost as rapidly as the collections have been deposited. In some instances the specimens have been sent to European specialists. There are at present more than 2,000 native tree species listed in the herbarium.

Some idea of the complexity of the forest can be had by comparison. The whole of North America north of Mexico contains approximately 640 tree species. The Philippine Islands, about equal in area to the territory of Arizona, probably contains three to four times this number. On the Lamao forest reservation alone embracing approximately 17 square miles, there have been collected 548 tree species, or nearly as many as there are in North America north of Mexico.

It is planned to continue during the coming year the collections of wood and herbarium specimens. This work, as in the past, will be carried on in connection with the mapping and with the collections of forest data. The intention is to have as complete collections as possible from each province, so that the geographical distribution of the timber trees especially will be better known and that there will be on hand in the museum of this bureau wood samples of all species.

NOTES ON THE FOREST AND TREES IN THE FOREST.

In connection with the mapping of forest and other land areas and the accumulation of data for preliminary working plans an effort has been made to classify the forest types and to locate and estimate the stand of the principal bodies of timber, with a view to setting aside such tracts as forest reserves. Again, for some years the bureau has been collecting data concerning the characteristics of trees. This includes tree descriptions and silvicultural habits. The data collected are now being compiled for publication.

Foresters in both the divisions of investigation and administration have collected notes of various kinds concerning forest products. A large number of these have been prepared under headings suitable for cataloguing and filing. These add materially to our knowledge of the forest products of the islands.

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DURABILITY TESTS.

The durability tests started in previous years have been pushed as rapidly as the limited force permits. At the close of this fiscal year the number of tests started was 156, nearly all of which have been placed during this year. This does not include a large number of woods collected, which as soon as they can be prepared will increase materially the number given above. Sufficient time has not as yet elapsed to obtain results from any of these tests. Aside from the proper determination of woods, it is believed that the most important need concerning Philippine timbers is a more definite knowledge of their ability to resist the attacks of fungi and the white ants.

It is hoped that for the coming fiscal year some one can be obtained to take charge of these tests and to cooperate with other bureaus and commercial firms who have charge of construction work throughout the islands.

MUSEUM.

At present the museum includes the following:

1.	Floor specimens of wood:	
	Large (3 feet)	167
	Medium (2½ feet)	48
	Small (1½ feet)	38
2.	Shelf specimens of wood not over 18 inches	797
3.	Hand specimens of wood (4 by 6 by ½)	5,803
4.	Plank specimens of selected wood	58
5.	Resins, gums, etc	73
6.	Wood oils	10
7.	Gutta-percha	37
8.	Rubber	27
9.	Tanbark and dyebark	28
10.	Other barks	10
11.	Bamboos	9
12.	Bejucos	207
13.	Fruits and seeds of trees	198
14.	Manufactured articles of forest products	36
15.	Manufactured products	26

The floor and wall space of the museum has become so crowded that it has been thought advisable to make arrangements to transfer all except the working portion of it to a larger room. Such a room has been secured, and as soon as prepared most of the exhibition part of the present museum material will be transferred to it and added to from time to time.

DISTRIBUTION AND IDENTIFICATION OF WOOD SAMPLES.

During the year there have been distributed a large number of hand specimens 4 by 6½ inches in dimensions. The object of this is to place as many authentically identified specimens as possible in the hands of those who will make proper use of them. There are on hand now 5,803 samples ready for distribution.

The excellent work of Doctor Foxworthy, of the bureau of science, on the woods of the Philippines, makes him most competent to identify Philippine woods; hence, nearly all woods submitted for identification were forwarded to him. His valuable publication entitled "Philippine Woods" brings a great deal of this information into such shape that the principal woods can now be more easily identified than formerly, hence a great deal of the work of determination can be performed by forest officers.

TIMBER-TESTING LABORATORY.

With the exception of the preparation of museum specimens of wood no work has been done at the timber-testing laboratory during this fiscal year. This was due to the inability to obtain a manager to take charge of the laboratory.

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PUBLICATIONS.

The following publications have been issued during the present fiscal year:

1. Bulletin No. 4 (revised).—Mechanical Tests, Properties, and Uses of Thirty-four Philippine Woods—Philippine Saw Mills, Lumber Market, and Prices, by Rolland Gardner.

2. Bulletin No. 7.—A Preliminary Check List of the Principal Commercial Timbers of the Philippine Islands, by Forester H. N. Whitford.

3. Circular No. 2.—Useful Information Concerning the Philippine Public Forests and Possibilities for their Exploitation.

In addition to the above a paper entitled "Philippine Woods," by Dr. F. W. Foxworthy, of the bureau of science, was published in the Philippine Journal of Science.

Material is now on hand for three new bulletins, as follows:

1. The Forests of Mindoro.
2. The Forests of Central and Southern Luzon.
3. Preliminary Working Plans for the Port Banga Lumber Concession and the Forest Conditions of Zamboanga Peninsula.

Additional data have been selected for a bulletin on the first 10 Philippine woods noted in the last annual report, and there is being compiled all information available concerning the description of the principal Philippine trees, with a view to a publication in the form of a bulletin entitled, "Easy Identification of the Principal Philippine Trees."

EDUCATIONAL WORK.

One line of work that needs special attention is that connected with the spreading of information concerning the attitude of the bureau toward our public forests. This can be done by the forest officers. Already lantern slides have been prepared for illustrated lectures. It is especially recommended that arrangements be made with the bureau of education, in accordance with Act No. 1829, for public lectures by the forest officers in English and in the native dialects, both to the school children in the different provinces and to other inhabitants of the same. It is thought that this will be our best method for disseminating knowledge concerning the forests, the forest policy of this bureau, and the relation of homesteads to the forest.

MINDORO.

In connection with the investigation by the forest officers of the forest resources of the island of Mindoro, their attention was drawn forcibly to the large and undeveloped area of valuable agricultural land lying between the foothills and the eastern coast of the island.

The route of a proposed road through this region was sketched and data were collected showing the possibilities of building such a road. This investigation indicates that the cost of such a road will not be very great, and that it would open up several hundred thousand acres of the richest agricultural land in the Philippine Islands, all within easy access of the coast and Manila. Manila is but ten to twelve hours distant by steamer from Calapan, the proposed northern terminus of the road. The town of Bongabon, 60 odd miles from Calapan, would be the southern terminus.

GEORGE P. AHERN,
Director of Forestry.

To the SECRETARY OF THE INTERIOR,
Manila, P. I.

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List of licenses to cut and gather forest products, granted by the bureau of forestry during the fiscal year 1908.

Provinces.	Timber.		Firewood.		Gratuitous.		Minor products.		Total.
	By bureau.	By subordinates.	By bureau.	By subordinates.	By bureau.	By subordinates.	By bureau.	By subordinates.	
Agusan	1								1
Albay	11			10				18	39
Antique	1	5			1			2	9
Bataan	39		1	19	1			15	75
Batangas	2	2		5					9
Benguet	12	15	1	2	9		1		40
Bohol	8	17		8	4				37
Bulacan	45			5	2		3	12	67
Cagayan	35			11	2	35		25	108
Camarines	16	5		26	4			85	136
Capiz	5			16				6	27
Cavite	1			9					10
Cebu	7	4		3				6	20
Ilocos Norte	7	29		2	5				43
Ilocos Sur	21	32		27	5		1	2	88
Iloilo	16	3		35	1			22	77
Isabela	27	5			1			3	36
Laguna	13		1	8				8	30
Lepanto-Bontoc	16	47			12				75
Leyte	19	1		20	2			12	54
Mindoro	55	7	1	53	2		5	72	195
Misamis	8	3		1				7	19
Moro	51	11		24	3		2	53	144
Negros Occidental	33	13		44	2			95	187
Negros Oriental	7	10		13	3			23	56
Nueva Ecija	34	8		5	1			13	61
Nueva Viscaya	1	27			2				30
Palawan	27			8			1	32	68
Pampanga	10		1	6	1			1	19
Pangasinan	55	47		34	4			13	153
Rizal	8		1	23	1			10	43
Subprovince, province of Romblon	7			2				7	16
Samar	7	1		17	2			5	32
Sorsogon	40	4		49	1			69	163
Surigao	30	1		1	1		2	6	41
Tarlac	24			9	2			6	41
Tayabas	32	105	1	66	2			84	290
Union	13	10			5				28
Zambales	29	1		25	3			43	101
Miscellaneous					1				1
Total	773	413	7	586	85	35	15	755	2,669

Registration of private woodlands in the bureau of forestry in accordance with section 24 of the forest act.

Number of titles to private woodlands registered in the bureau of forestry during the fiscal year 1908 6
Total area of private woodlands registered in the bureau of forestry during the fiscal year 1908 ..... hectares.. 618
Number of titles to private woodlands registered in bureau of forestry up to June 30, 1908 175
Total area of private woodlands registered in bureau of forestry up to June 30, 1908 ..... hectares.. *284,311

*NOTE.—Equivalent to 702,248 acres.

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Report of the utilization of forest products from public and private forests, July 1, 1907, to June 30, 1908.

Province.	Timber.			Minor products.								
	First group.	Lower groups.	Total.	Firewood.	Charcoal.	Tan bark.	Dye bark.	Wood oils.	Gum mastic.	Rattan.	Pitch.	Dyewood.
	c. m.	*c. m.*	*c. m.*	*c. m.*	*c. m.*	*q. m.*[a]	*q. m.*[a]	*Liters*	*q. m.*[a]	*Pieces.*	*q. m.*[a]	*q. m.*[a]
Agusan										76,000		
Albay	139	635	774	738		317			225	2,264,200		
Ambo Camarines	339	958	1,297	3,720					904	18,681,885	35	
Antique		18	18			55				25,000		
Bataan	230	15,976	16,206	27,520	225				14	7,325,645		
Batangas	82	259	341	6,298		51				172,981	1	
Benguet	60	2,246	2,306									
Bohol	448	675	1,123	2,998	10	221				43,000		
Bulacan	99	5,040	5,139	7,001	165				4	1,246,175		
Cagayan	2,003	1,443	3,446	1,280		1,453				3,137,630		
Capiz		360	360	17,812		53	206			10,000		19
Cavite	14	59	73	4,290	27							
Cebu	114	460	574	1,491	962	50	385			426,240		
Ilocos Norte	96	41	137	323						1,000		
Ilocos Sur	497	956	1,453	2,991	3					116,100		
Iloilo	132	337	469	14,713	583	7	57	801		29,800		22,782
Isabela	849	647	1,496							300		
La Laguna	3	1,333	1,336	2,034						932,680		
La Union	221	47	268	7								
Lepanto-Bontoc	151	44	195									
Leyte	204	1,354	1,558	3,021	3	342		9,929		2,074,051	4	
Mindoro	1,498	9,046	10,544	4,175	153	1,967	172			1,742,555		
Misamis	85	79	164			24				680,400		
Moro	6,590	8,259	14,849	1,190	2	3,777	31		7,025	2,935,000	849	
Negros Occidental	1,277	11,406	12,683	8,082	454	177		9,254		5,702,715		
Negros Oriental	99	71	170	210		262		3,841		3,551,200		
Nueva Ecija	776	810	1,586	2,015		627				2,141,700		
Nueva Vizcaya	46	27	73									
Palawan	3,554	104	3,658	372		674	64	16	753	95,000		
Pampanga	5	1,625	1,630	34,723	786							
Pangasinan	758	1,206	1,964	5,517	182	623				311,010		
Rizal	10	66	76	12,768	17		56			1,069,690		
Romblon	137	278	415	70	39		9	1,212	53	52,000	26	
Samar	502	226	728	2,713		1,355	125	1,161	9	991,400		
Sorsogon	1,926	1,377	3,303	7,129		3,955	101	340	34	9,152,260	152	
Surigao	53	138	191	93		428		600		146,800		
Tarlac	273	3,917	4,190	1,419	36	33			11	181,830		
Tayabas	1,622	4,916	6,538	21,080		315	86		398	1,526,535	324	
Zambales	694	2,253	2,947	1,733	888		75		9	456,300		
Total	25,586	78,692	104,278	[b]192,526	4,535	16,766	1,367	27,154	9,439	67,299,082	1,391	22,801

[a] Metric quintal of 220.46 pounds.
[b] Approximately 3,150 cubic meters, or 3 per cent cut from registered private woodlands.

Gutta-percha and rubber, 896 metric quintals.
Diliman (vine used for tying fish traps), 1,595,849 pieces.

Amount of timber cut by leading licensees during fiscal year 1908.

[According to invoices received by the bureau of internal revenue.]

Licensee.	Location.	Amount cut.
		c. m.
Insular Lumber Co.[a]	Cadiz Nuevo and Sagay, Negros Occidental	5,002
Redding & Williamson[a]	Zamboanga, Moro	4,322
Reiss & Mitchell[a]	Pasacao, Camarines	613
Tayabas Sawmill and Lumber Co.[a]	Guinayangan, Tayabas	415
Mindoro Lumber and Logging Co.[a]	Pinamalayan, Mindoro	97
John Gibson	Pinamalayan and Bulalacao, Mindoro	2,139
Benguet Commercial Co	Bagulo, Benguet	2,122
Beebe, Lyon & Co	Zamboanga, Moro	1,781
Umsan Timber Cutters' Association	Pitogo, Tayabas	1,546

[a] Twenty-year license agreement.

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Amount of timber cut by leading licensees during fiscal year 1908—Continued.

Licensee.	Location.	Amount cut.
		c. m.
Miguel Malvar	Balanga and Orion, Bataan	1,359
Salvador Linao	Moron, Bataan	1,318
Vicente Mijares	Dinalupijan, Bataan	1,249
I. Frank Roeder	Cotabato, Moro	1,121
Felix Labasan	Subic, Zambales	992
E. J. Pfleider	Cauayan, Negros Occidental	960
Vda. de Verchez	Calauag, Tayabas	917
Salustiano Ponco	Moron, Bataan	886
Eleuterio Cheng-te	do	819
G. E. Enriquez	Zamboanga, Moro	751
Chas. A. Barber	Pinamalayan, Mindoro	742
Nicanor Afable	Subic, Zambales	720
Nicetas Lesaca	do	692
Ramon Murga	Puerto Princesa, Palawan	621
Leoncio Marquez	Bagac, Bataan	613
Juan Morente	Pinamalayan, Mindoro	576
Eugenio Loreto	Bagac, Bataan	570
Kaad & Holmsen	Puerto Princesa, Palawan	557
Pascual Bernabe	Angat, Bulacan	551
Arturo H. Bernardo	Sablayan, Mindoro	544
Astigarraga & Co	Camalaniugan, Cagayan	532
Braulio Tongco	Dinalupijan, Bataan	522
	Total	[a] 35,649

[a] Equivalent to about 10,694,700 feet b. m.

Total amount of timber cut by all licensees, 73,637 cubic meters, equivalent to about 22,091,100 feet b. m.

Of the 1,186 timber licenses granted during the fiscal year, 558 licensees took advantage of their licenses.

Statement showing amounts of important timbers, by species, cut in the Philippine Islands during the fiscal year 1908.

[According to invoices received by bureau of internal revenue.]

Species.	Amount cut.	Species.	Amount cut.
	Cubic meters.		*Cubic meters.*
Lauan	19,758	Dungon	2,233
Apitong	13,696	Tanguile	1,838
Guijo	9,937	Amuguis	1,546
Molave	8,499	Tindalo	1,018
Ipil	6,908	Acle	860
Yacal	5,424	Macaasin	844
Narra	4,396	Calantas	804

Imports and exports of lumber in the Philippine Islands during the fiscal year 1908.

	Imports.	Exports.
	Feet b. m.	*Feet b. m.*
From the United States	5,791,198	.....
From other countries	2,888,433	.....
Exports:		
To the United States	.....	615,080
To other countries	.....	310,080

It is to be noted that during the past fiscal year the imports from the United States have diminished about one-half, and that there is a slight increase in the amount of lumber imported from other countries, as compared with the imports of the previous fiscal year.

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On the other hand, the exports of Philippine lumber to the United States and to other countries have increased. The people of the United States and other countries are gradually becoming acquainted with our woods and it is expected that within a few years there will be a steady demand for Philippine timber.

The Quartermaster's Department, U. S. Army, has imported (free of duty) the following lumber from the United States for use in military construction, etc.:

Oregon pine	feet b. m.	5,003,897
Poplar	do	9,523
Oak	do	53,667
Redwood	do	19,110
Total [a]	do	5,086,197

Applications for permits to make caiñgins, or forest clearings, July 1, 1907, to June 30, 1908.

Provinces.	On public lands.		On private lands.		
			Granted—		
	Granted by forest officers.	Total.	By forest officers.	By municipal presidents.	Total.
Bataan	148	148	2	.....	2
Capiz	1	1	.....	.....	.....
Ilocos Norte	832	832	.....	.....	.....
Ilocos Sur	1,224	1,224	14	1	15
Iloilo	1	1	.....	.....	.....
Lepanto-Bontoc	148	148	.....	.....	.....
Mindoro	222	222	2	.....	2
Moro	29	29	.....	.....	.....
Negros Occidental	.....	.....	1	.....	1
Nueva Ecija	11	11	3	.....	3
Palawan	200	200	6	.....	6
Pangasinan	16	16	.....	.....	.....
Sorsogon	7	7	.....	.....	.....
Tayabas	3	3	8	.....	8
Union	114	114	1	2	3
Total	2,956	2,956	37	3	40

Applications for homesteads, purchase, and lease of public lands, July 1, 1907, to June 30, 1908.

Provinces.	Certified as more valuable for agricultural or forest purposes.								Grand total.
	Homestead.			Sale.			Lease.		
	Agricultural.	Forest.	Total.	Agricultural.	Forest.	Total.	Agricultural.	Total.	
Albay	34	.....	34	.....	.....	.....	.....	.....	34
Ambos Camarines	270	1	271	.....	.....	.....	.....	.....	271
Antique	4	1	5	.....	.....	.....	.....	.....	5
Bataan	12	.....	12	2	.....	2	1	1	15
Cagayan	38	.....	38	1	.....	1	.....	.....	39
Capiz	80	1	81	1	1	2	.....	.....	83
Cebu	6	4	10	4	.....	4	.....	.....	14
Ilocos Norte	40	2	42	9	.....	9	.....	.....	51
Ilocos Sur	50	1	51	3	.....	3	.....	.....	54
Iloilo	25	.....	25	.....	.....	.....	.....	.....	25
Isabela	54	.....	54	1	.....	1	.....	.....	55

[a] An increase of over 2,000,000 feet b. m. over the amount imported last year.

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Applications for homesteads, purchase, and lease of public lands, July 1, 1907, to June 30, 1907—Continued.

Provinces.	Certified as more valuable for agriculture or forest purposes.								Grand total.
	Homestead.			Sale.			Lease.		
	Agricultural.	Forest.	Total.	Agricultural.	Forest.	Total.	Agricultural.	Total.	
Laguna	13	6	19	2	.....	2	.....	.....	21
Lepanto-Bontoc	1	.....	1	.....	.....	.....	.....	.....	1
Leyte	33	2	35	.....	.....	.....	.....	.....	35
Mindoro	118	1	119	2	.....	2	1	1	122
Misamis	1	.....	1	.....	.....	.....	.....	.....	1
Moro	6	.....	6	.....	.....	.....	18	18	24
Nueva Ecija	311	3	314	2	.....	2	1	1	317
Negros Occidental	142	9	151	.....	.....	.....	1	1	152
Negros Oriental	8	1	9	.....	.....	.....	.....	.....	9
Palawan	29	5	34	2	.....	2	2	2	38
Pampanga	4	.....	4	.....	.....	.....	.....	.....	4
Pangasinan	189	9	198	3	.....	3	.....	.....	201
Rizal	20	.....	20	5	.....	5	2	2	27
Sorsogon	200	1	201	.....	.....	.....	.....	.....	201
Surigao	18	.....	18	.....	.....	.....	.....	.....	18
Tarlac	104	.....	104	.....	.....	.....	.....	.....	104
Tayabas	606	3	609	10	.....	10	.....	.....	619
Union	30	.....	30	.....	.....	.....	.....	.....	30
Zambales	10	1	11	2	.....	2	.....	.....	13
Total	2,456	51	2,507	49	1	50	26	26	2,583
Recapitulation by fiscal years:									
1908	2,456	51	2,507	49	1	50	26	26	2,583
1907	881	19	900	23	.....	23	12	12	935
1906	318	16	334	20	1	21	1	1	356
1905	80	6	86	8	.....	8	.....	.....	94
Total	3,735	92	3,827	100	2	102	38	38	3,968

NOTE.—Number of applications for homestead, purchase, or lease of public lands, pending inspection and certification on June 30, 1908, 880.

Revenue from the sale of forest products, fiscal year 1908.

Provinces.	Amount.	Provinces.	Amount.
Agusan	₱58.28	Manila	₱78,127.17
Albay	2,937.84	Mindoro	2,571.15
Ambos Camarines	7,384.17	Misamis	1,082.54
Antique	99.03	Moro	15,829.48
Bataan	4,129.38	Negros Occidental	6,407.92
Batangas	1,300.45	Negros Oriental	1,374.96
Benguet	2,170.98	Nueva Viscaya	256.75
Bohol	849.55	Nueva Ecija	4,109.81
Bulacan	5,157.94	Palawan	2,476.26
Cagayan	7,274.82	Pampanga	2,216.45
Capiz	2,684.48	Pangasinan	4,909.14
Cavite	555.46	Rizal	2,025.87
Cebu	7,594.58	Samar	1,737.95
Ilocos Norte	718.37	Sorsogon	5,541.64
Ilocos Sur	4,284.68	Surigao	827.16
Iloilo	14,023.69	Tarlac	2,329.07
Isabela	4,118.17	Tayabas	4,190.91
La Laguna	1,348.94	Zambales	1,175.64
La Union	1,267.25		
Lepanto-Bontoc	823.82	Total	211,570.62
Leyte	5,598.87		

Of the above amount, ₱129,602.65 was collected on timber; ₱24,335.57 was collected on firewood; ₱57,632.40 was collected on other minor forest products.

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Expenditures by Bureau of Forestry, July 1, 1907, to June 30, 1908.

OFFICE FORCE AND GENERAL EXPENSES.

Salaries and wages	₱22,374.26	
Per diems	190.50	
Postage and telegrams	697.94	
Transportation, etc	4,396.38	
Repairs and miscellaneous expenses	1,388.23	
Supplies	2,587.61	
Purchase wood samples	116.69	
Office rent and maintenance	894.93	
Printing and binding	1,437.16	
Refunds after expiration of contract service	4,405.16	
		₱38,488.86

DIVISION OF FOREST ADMINISTRATION.

Salaries and wages	₱35,216.66	
Labor hire	1,135.50	
Per diems	5,191.54	
Postage and telegrams	232.25	
Transportation, etc	3,605.00	
Office rent	384.00	
Other field expenses	1,001.00	
		46,765.95

DIVISION OF FOREST INVESTIGATION.

Salaries and wages	₱14,699.78	
Labor hire	1,210.65	
Per diems	2,183.02	
Postage and telegrams	19.75	
Transportation, etc	1,045.26	
Other field expenses	1,106.10	
		20,264.56
Total		105,519.37
Outstanding liabilities, fiscal year 1907, paid during fiscal year 1908		1,723.12
Total expenditures, fiscal year 1908		107,242.49

RECAPITULATION.

Appropriation for fiscal year 1908	₱111,000.00	
Balance from fiscal year 1907	1,834.76	
Miscellaneous receipts and refunds	28.81	
Total amount available		₱112,863.57
Total expenditures, fiscal year 1908		107,242.49
Actual balance on hand June 30, 1908		5,621.08
Outstanding liabilities, fiscal year 1908 (approximately)		5,550.00

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APPENDIX D.

REPORT OF THE DIRECTOR, BUREAU OF SCIENCE.

DEPARTMENT OF THE INTERIOR,
BUREAU OF SCIENCE,
Manila, August —, 1908.

SIR: The following report gives an account of the work performed in the bureau of science for the period from August 1, 1907, to August 1, 1908, together with such recommendations as to future improvements as seemed to me to be necessary.

The past year has been one of rapid development in a number of branches of the work of the bureau of science, and, as in 1907, the one which perhaps calls for greatest attention and the adoption of a permanent, carefully considered policy is that involving the relations between this bureau and the Philippine Medical School. It is for this reason that a brief statement, somewhat more ample than the one in the previous annual report regarding the growth of the latter institution and its clinics, is here given.

THE PHILIPPINE MEDICAL SCHOOL.

The first academic year of this institution closed on February 17, 1908. By this time the organization of the faculty and the clerical force had been completed so far as was practicable, and the director of the bureau of science could calculate fully the calls which would be made upon his staff in the development of the lectures and clinics and upon his stock of apparatus and supplies in furnishing other material absolutely needed to carry on the work before the equipment of the school would arrive.

The following members of the bureau of science are more or less actively engaged in the task of instruction: The director, Doctors Musgrave, Marshall, Garrison, Ruediger, and Messrs. Vivencio del Rosario, and Clegg. Doctor Strong was absent on leave during the greater part of the year, but assumed his duties as professor of tropical medicine upon his return. Doctors Gilman and Bean, in pathology and anatomy, respectively, came from the United States as members of the faculty of the medical school, and are on the pay rolls of that institution. It soon became apparent that, unless instruction were to be merely perfunctory and if proper attention were to be given to lectures, laboratory courses, and clinics, the strain would be very great, not only upon the members of the staff of the bureau who are members of the faculty, but also upon the others who are not connected with the school, but who are compelled to take the extra work brought upon them by the partial absence of so many of their colleagues. Despite this handicap, the work of the bureau of science was properly cared for and the laboratory courses in chemistry, anatomy, pathology and bacteriology, medical zoology and clinical microscopy in the medical school were soon organized and running smoothly, although some difficulty was at first experienced in procuring sufficient material for dissection and autopsy.

The clinical branches were somewhat more difficult to adjust. These required the organization of the dispensary, for which space had been obtained on the ground floor of St. Paul's Hospital, the adoption of a system of records and prescriptions for the patients coming to this clinic, the establishment of a pharmacy, the devising of a method of dividing the patients among the teaching staff and the externes, and the preparation of regulations concerning the admission of patients to the free beds, paid for by the government and controlled by the faculty of the school.

ARRANGEMENT OF THE CLINICS.

Funds for 50 beds for the clinical use of the school were furnished by Act No. 1679, and 50 more, supported by the city of Manila, were also available. This made 100 beds to be divided between the chairs of surgery (including gynecology and genito-urinary diseases), clinical medicine, tropical medicine, obstetrics, pediatrics and ophthalmology, otology and rhinology. It can readily be seen that this left but few available beds for each department of the work,

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and made a careful adjustment of the needs of each chair imperative. It also rendered necessary the adoption of uniform hospital rules, case histories, and records. The faculty, to meet these requirements, authorized the dean to appoint a clinical committee, which consists of all the members engaged in clinical teaching, and a chief of clinics, who is chairman of the committee and who has charge of the general unification of the work, the admission of patients and the monthly certification to the chairman of the board of control of the number of beds occupied. Doctor Musgrave was appointed chief of clinics, and as at that time, owing to the absence of Doctor Strong, he was also acting chief of the biological laboratory of the bureau of science, it is evident that his time was more than fully occupied, yet despite this fact he carried on research work successfully and prepared two papers for publication, one of which concerned a new *Streptothrix* isolated from a case of madura foot.

The organization of the clinics proceeded successfully and by the end of the year all causes of friction had been adjusted, although the great need of good internes to be continually in the hospital was seriously felt. This lack throws additional work upon the staff, especially upon those who also have their duties at the bureau of science, as it necessitates repeated visits to the hospital after the official hours of the day are completed. The number of patients visiting the dispensary has increased from month to month almost without a break.

PHILIPPINE MEDICAL SCHOOL FREE DISPENSARY.

The following is a report of the number of patients visiting the clinic, by months.[a]

After the first few weeks the beds in the hospital were continually filled, and it is always impossible to accommodate all of the patients who apply. One fundamental need, not only of the school, but also of the bureaus which are engaged in the study of diseases as they exist in the Tropics, is for more hospital beds, but this can not be met in any measure until the new hospital, the plans of which are just finished, is completed, although possibly 50 more might be provided for in the next appropriation bill. When, for example, the chairs of clinical and tropical medicine are limited to from 15 to 20 beds each, it is obvious that a great variety of diseases can not be studied, the instructors having to confine themselves to a few typical cases of the particular subjects they wish to discuss, to the exclusion of others. This is neither good for the general conduct of the hospital nor for the class work and it is certainly very detrimental to investigation. There came under consideration as clinical material for the purpose of instruction 1,979 patients, although classification of all the cases is not complete and can not be for some time, as such a compilation of accurate and well-considered data will take much time, but the principal diseases among protozoal infections have been in part reviewed and were as follows: Amœbiasis occurred in more than 25 per cent of the patients, and, furthermore, lesions due to the action of this parasite were present in approximately 50 per cent of the autopsies of patients dying in the wards; hepatic abscesses were observed approximately 11 times during the year; splenomegaly of various types has been a very common cause of admission, but, although more than 50 splenic punctures have been made, the Leishmann-Donovan bodies have not been found. The tertiary lesions of syphilis and neurologic manifestations of the infection, such as locomotor ataxia, paresis, and others, have been quite common. Malaria, with the æstivo-autumnal fever predominant, has been the cause of admission in about 15 per cent of the cases; opisthorchiasis has furnished 15 to 20 cases, paragonimiasis 3, schistosomiasis, a few; infections with *Tœnia* were not very frequent, about 20 cases being observed, but uncinariasis was of course present in a large number of instances. Three exceedingly severe infections with *Strongyloides* were met with, and in one instance these organisms were apparently the sole cause of death. *Ascaris*, especially *Asperus lumbricoides*, is exceedingly common, particularly in children; *Oxyuris vermicularis* has also been met with a number of times. This very brief summary, which is by no means complete, gives some idea of the variety of protozoal infection which the students have an opportunity to see. Bacterial infections, such as tuberculosis in its various forms, typhoid fever, pneumonia, and others, of course, formed a large proportion of the causes of admission. The classification of the latter is not sufficiently far advanced to give an outline. However, it is apparent that am-

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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ple material for instruction is at hand, that if more beds were available they would promptly be filled, and that the clinics of the medical school, besides the purpose for which they were arranged, in reality constitute a great charity.

The school has been compelled to buy a certain amount of surgical and other equipment for its clinics and has placed a number of microscopes at St. Paul's Hospital for the use of its students. All of this apparatus is properly marked and available in the new General Hospital.

CASE RECORDS.

The clinical work in the new General Hospital will constitute a continuation of that at present being carried on at St. Paul's, and it would be most unfortunate if the case records at present being compiled at the latter institution could not be transferred to the new one upon its completion. These case records constitute a beginning of the great work of properly classifying and studying diseases in the Philippines, and therefore the clinical committee has deemed it necessary to adopt a permanent form, adapted from the best practice in the hospitals of the world and modified to meet local conditions; the records kept on these blanks can be transferred when the time comes.

ASSISTANTS.

It became evident soon after the organization of the school that it would be impossible for the salaries offered to secure the necessary assistants in the minor positions with proper training from outside the institution, and therefore, with the beginning of the second academic year, the old places of demonstrators and instructors at salaries of from ₱1,000 to ₱2,400 per annum were abandoned and in their place 3 grades of student assistants were substituted, namely, student demonstrators at ₱480, first-class student assistants at ₱240, and second-class student assistants at ₱120 per annum. This system will need to be continued until we have graduates of our own who can take the higher positions of graduate instructors and demonstrators and who will have the proper training to advance in the ranks of the faculty.

RESEARCH IN THE MEDICAL SCHOOL.

Research work, apart from that more properly belonging in the bureau of science, has been going on in spite of the handicap brought upon the members of the faculty by the work of organization. Doctor Gilman, at first in conjunction with Doctor Marshall, afterwards alone, has already studied and published in the Philippine Journal of Science the results of 100 autopsies and is well along on his second hundred, this series being the beginning of the compilation of data of great importance for a proper comprehension of the conditions which surround us. The chair of pathology and bacteriology has also undertaken the formation of a museum of pathology for the school. Material of much interest has already been gathered; it will be carefully studied and the results published as opportunity offers. Doctor Bean has finished his paper embodying the results of the measurements of more than 1,000 students (923 boys, 116 girls) at the University of Michigan, and, as his time has permitted, has been actively engaged in completing the anthropometric records of 775 school children in the Philippines, 100 brain weights with measurements of the bodies and heads of Filipinos and 145 measurements of Igorots. Other studies which will throw light upon the race histories of the peoples of these islands have also been undertaken. The medical school is fortunate in having secured the services of an anatomist who is also trained in anthropometric work, as a thorough study of the Filipino peoples conducted by a trained investigator will do much to assist us in our educational problems.

NUMBER OF STUDENTS AND REQUIREMENTS FOR ADMISSION.

The number of students enrolled in the Philippine Medical School is as follows: First year, 22; second year, 16; third year, 7; fourth year, 10; fifth year, 12; total, 67.

Some criticism has been expressed regarding the supposed leniency of the school in its interpretation of the entrance requirements at the present time. The attitude of the majority of the faculty on this subject is that the present

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hygienic conditions of the archipelago imperatively demand at as early a date as possible as many reasonably well-trained native physicians as can be secured. It believes that the propaganda for advancing the mode of life of the provincial population, for the understanding of the meaning of the precautions to be taken by each individual to prevent the spread of infectious and epidemic diseases and for the eradication of pernicious superstitions can only successfully be disseminated by natives educated in modern laboratory methods, who will explain the more recent ideas on the propagation of disease with the conviction that they are correct and not with the inward feeling that they are merely a mass of theories, more or less unreliable in emergencies, and to be superseded at will by the older views and beliefs. It is true that possibly by waiting long enough we could procure for admission a sufficient number of entrants who would have all the preliminary training that could be asked of the candidates, but nevertheless, among those who at present gain admission with what may be called a liberal interpretation of the requirements, there will be a large percentage who can successfully complete the course; the others will fall by the wayside, and in this way we will have gained a number of years. We have already waited too long in undertaking many of the permanent projects in the islands. I do not wish to be misunderstood as saying that we have admitted students who in the face of the examination returns were obviously unfit to go on with the work. I mean to say that we have been sufficiently liberal to admit enough students to form a fair-sized class, all of whom have prospects of being able to carry the work, without regard to the question of whether or not they have actually gained a graduation certificate from a high school or normal school. The standard will steadily be raised as the schools become able to supply graduate material, and at the same time the standard of the older, nongovernment institutions in the archipelago will be advanced to a point where they also can send as well equipped students.

The conditions are not as they are in the United States or Europe. In these countries there are many excellent colleges or gymnasia which supply more than enough aspirants to the medical profession; even the smallest village has its doctor. It is different in the Philippines. The government schools have slowly been working up to the point where they have prospects of graduating throughout the islands in one year a sufficient number of students whose preparation may be considered as equivalent to that which we could expect at home. The private and ecclesiastical schools are laudably also endeavoring to increase their standard, and, while the plan of studies and mental training of their pupils may be different, still, if these pupils were to acquire a thorough knowledge of English and if methods of laboratory training could be advanced considerably, I can see no reason why this class of students should not do as well in medicine as the others. Meanwhile, according to statistics available, there is but one physician to every 430 square miles of territory in the Philippines, and even many towns of some importance not only do not have a resident doctor, but a physician is even lacking within a radius of many miles in districts where transportation is often difficult or impossible. It is the general opinion of the faculty that, so far, we have every reason to be satisfied with the intelligence, industry, and progress of our students. Some, of course, have been dropped, but the majority will continue throughout the five years and ultimately obtain their degree.

THE RELATION BETWEEN THE CLINICAL TEACHING AND THE LABORATORY WORK IN THE BUREAU OF SCIENCE.

I have entered thus fully into a discussion of the Philippine Medical School in a report of the director of the bureau of science, because the relations between the bureau and the school are so inseparable that one can scarcely be considered without the other and because, in order successfully to advance both hospital and laboratory work and to accomplish what we should in regard to a study of diseases in the provinces, a comprehensive readjustment of the present plan, involving some additional expense will be necessary.

The work naturally divides itself into two branches, the one more strictly pertaining to the biological laboratory of the bureau of science, involving work in serum therapy and immunity, in helminthology, bacteriology, pathology both in Manila and in the provinces, in working out in the laboratory of problems first encountered in the clinics, in doing the diagnostic work for the hospitals, prisons, and in assisting the health authorities in every way to give a scientific and comprehensive basis to their measures of practical hygiene. This field, in-

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cluding the necessary laboratory teaching in the medical school, is sufficiently great to occupy all of the time of the chief of the laboratory and his staff. On the other hand, we have the active work in the wards, the study of the clinical manifestations of the diseases which occur in this archipelago and the frequent encountering of infections which have heretofore been unknown in the Philippines or which may even be due to hitherto unknown pathogenic organisms. This work, as experience has shown, frequently involves extended laboratory study.

The conclusion is obvious. We should have a laboratory staff whose duty should primarily be to the biological laboratory, which should be able to devote all of its time to this work or to the teaching immediately connected with it and which should be sufficiently large to maintain some members in the provinces at all times, for experience has taught us that many conditions and diseases are encountered in the provinces which are unknown in Manila. However, this staff as a necessary condition to successful work, should have the privilege of entry to the clinical wards of the hospital to follow up and study any diseases which their laboratory studies prove to be worthy of extended investigation. The salaries and costs belonging to this staff should obviously be borne by the bureau of science.

We must also have a clinical staff whose duties pertain closely to the needs of the patients in the hospital, to clinical instruction, and to the investigation of diseases as they occur in the Philippines. The clinics would be fed not only by the incoming patients, but also by material sent in from the provinces by the laboratory staff. However, the clinical staff, to obtain full advantage of the conditions, should have space and apparatus always available in the laboratory, so that its members also could complete the studies of their cases and could fully understand new conditions. The students would have the dual advantage of hospital and laboratory, could early in their studies be taught the necessity of following out all the details of the investigation of their cases, and would thus gain the independent method of thought which will be so necessary for them when they are isolated in provincial towns.

The conditions at present are as follows: We have on the faculty of the medical school members who are devoting their time exclusively to instruction and to research connected with their specialties, and whose salaries are met by the medical school; we have others who are practicing their professions and who, also by appointment, hold clinical positions on the faculty, devoting a portion of their time to clinical teaching. The salaries of this class are also paid by the medical school. We have a third class, the representatives of which belong to the staff of the bureau of science, who give a part of their time to the duties of the medical school and a part to the work of the laboratory. Their salaries come from the bureau of science, but among the latter are some who are engaged, not in instruction in laboratory branches, but in clinical teaching, and who practice their professions as well. The result is not of the best advantage either to the medical school or to the laboratory. The chief of the biological laboratory not only is engaged in teaching every Monday, Wednesday, and Friday from 7.30 to 9 or 9.30 a. m., and every Tuesday, Thursday, and Saturday from 10.30 a. m. to 12 m., but outside of these hours he must give some attention to the task of providing his clinics with suitable material and besides, with a number of hospital patients under his care, he must frequently return to the hospital later in the day. When, beyond this, we allow some time for recreation and some for such outside patients as he is compelled to attend, it is obvious that the biological laboratory and its investigations, among the most important undertakings in the Philippines, can have at best but a certain fraction of his time.

The second to the chief of the biological laboratory is not only professor of clinical medicine, but is also chief of clinics in the medical school. He, too, has long hours of clinical instruction, from 8.30 to about 10 a. m. Mondays, Wednesdays, and Fridays, from 7.30 to 10.30 a. m. on Tuesdays and Thursdays, and from 9.30 to 10.30 a. m. on Saturdays; he must give considerable extra time to his clinical patients and after the official hours he also attends to his private practice. The result is that he can give but few hours a day to his laboratory researches, and the biological laboratory suffers in consequence. Even if both these scientific workers were to abandon all attention to outside patients, which at present, out of regard to the community at large and with due consideration of the number of available practitioners in Manila, would be impossible, this sacrifice would not give the laboratory any more actual service within the

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building. It would only result in their being able to give more time to outside study and recreation and more thought to the work of the laboratory.

The biological laboratory is thus in the condition of having its two head men away for a good share of each day engaged in work which, while of course it is intimately connected with the laboratory, is not laboratory work per se. The younger men in the laboratory, whose time is not so taken with other duties, need to be encouraged by word and example; they require advice in their work where advice is necessary, and correction where it is needed, and, above all, they should constantly be spurred on by the spirit of work and enthusiasm which alone builds up a scientific institution. The absence of their colleagues in the higher positions and the knowledge that it is not expected of them rigidly to devote their energies solely to the advancement of laboratory study does not tend in this direction. Above all, they need the object lesson of some extensive and fundamental piece of research being pushed forward by their superiors, whose wide experience and comprehensive viewpoint show them how they, too, can develop great things.

It is unfortunate that the conditions of necessity are such that there seems no remedy for the present. The work of the school, once begun, must go on, and we must use our best men in teaching and clinical work, but nevertheless it is distinctly my opinion that if we wish to obtain the results we imperatively need from the biological laboratory, a division with close union must be made. The clinical staff, with the privilege of private practice and also the right to laboratory space, apparatus, and facilities, should pertain primarily to the medical school and hospital; the laboratory staff, without the privilege of private practice belonging in the first instance to the laboratory, with the right to the clinical facilities of the hospital when they are needed to follow out their work. The entire body, clinical and laboratory, should form a united scientific unit, each member assisting the others to advance our knowledge of disease and prophylaxis in the islands.

The additional cost to the government would be the salaries paid to the clinical professors in the medical school; the gain would be a biological laboratory which, without severing its clinical connections, would be able to devote all of its time to the problems which surround us and which can only be settled by laboratory investigation. These problems could be advanced at a rapid pace, and as their understanding is fundamental in the hygienic regeneration of the islands, the result would be a saving of money. It may not be out of place to state that all biological laboratories, similar to ours, in Europe, have hospitals connected with them, and that, vice versa, all large hospitals conducted on modern lines throughout the world have laboratories for the purpose of more extended clinical study. The latter condition has always been met by the government, the former, so far as possible, but the founding of the medical school has brought about conditions necessitating a much more absolute and intimate interrelationship.

THE ORGANIZATION OF A MORGUE AT THE PHILIPPINE MEDICAL SCHOOL.

The formation of the department of pathology and bacteriology in the Philippine Medical School rendered it necessary to transfer all of the general autopsy work to that institution. The school has a well-equipped morgue, screened against flies and insects, and with the members of the staff constantly accessible. Autopsies can be performed promptly and without the loss of time, which formerly was necessary incident to going to San Lazaro. I can absolutely see no objection to transferring the bodies of those dead of dangerous and communicable infectious diseases to this new morgue. It certainly, under Doctor Gilman's direction, is in better condition and better cared for than is the old one at the other end of the city. The spread of infectious diseases from a morgue depends upon the manner of construction of the building, the degree of discipline of the staff and the care and precautions taken. All of these conditions are met in the best way possible in the medical school.

THE SECURING OF TRAINED MEN FOR THE BUREAU OF SCIENCE.

We have continued the policy of securing young men with proper fundamental training who have shown the ability to do good work, relying upon the ability of the more experienced specialists here to round out the knowledge and advance the technique of the later arrivals to the point where the latter, also, produce the results in conformity with the traditions of the institution. However, we are in many instances confronted with the result that in two years

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or more they find more attractive places elsewhere, just as they are accomplishing important work in the study of the conditions which we have to meet, or in the bacteriology or pathology of the diseases which it is necessary more thoroughly to understand to obtain the best results in prophylaxis. The investigations are therefore once more interrupted, to be again taken up by new men, who must spend at least a year in becoming thoroughly familiar with the problems. A concrete example occurred this year by our losing Doctor Marshall, who was called to the chair of pathology in the University of Virginia. Doctor Marshall has been in the bureau two years and was in the midst of a most important investigation on the morphology of a large number of strains of the cholera spirillum obtained from various sources and under different conditions, the research including the changes in the virulence, the variation in form, and the relations between the individual cultures, all in connection with the occurrence of the disease in these islands. A large part of the work is practically completed, Doctor Marshall having taken all but a synopsis of his results with him for the purpose of placing them in form for publication; but many questions in regard to this investigation remain to be answered, and the work must be carried forward by new men who have not had the varied experience acquired by Doctor Marshall with these particular strains, nor his intimate contact with the conditions of the past two years; who have not heard the extended discussion of the problem which has been going on between the members of the bureaus of science and health, and who have not had access to the large amount of necroscopy material which came under Doctor Marshall's hands.

An adequate system of pensions for service and the certainty of the permanency of the service and of future rewards for good work would be a financial gain in the end. Another relief it is hoped will gradually come about in the measure, as we can obtain young Filipino graduates from the United States and from the Philippine Medical School, who shall step by step replace the present incumbents of the lower positions as vacancies occur. It must be clearly understood that this policy necessitates a somewhat greater expense in salaries paid by the bureau while the substitutions are being brought about, as the young men will be just fresh from college, with no graduate experience, and at the beginning without ability to work independently and to carry on investigations. For a year at least after their entrance to the bureau they would be under the tutelage of the present incumbents and at smaller salaries, which would have to be met by appropriation; then gradually they would work upward as they gained experience and as their talents warranted. The ultimate result will be that only a few well-paid specialists with world-wide reputations shall remain at the head of the work of investigation, these to be associated in the routine and research by the rising younger generation of scientifically trained Filipinos. This seems to me to be the only means of continuing the progress of the laboratories in the future and of bringing them to a still higher plane of efficiency. We must always have a certain number of men who are recognized authorities in their specialties, who have the comprehensive and original point of view necessary for carrying on original investigations of great scope, and who can be relied upon to obtain such accurate and far-reaching results that they will be of permanent benefit to the country and the world at large.

This bureau is not like others, where one position leads naturally to the next above, through regular graduation to the highest. Each man on the scientific staff must be specially prepared and trained; in most instances he can not cross over to the other lines of work and must depend upon advancement in his own particular branch. Places are always available in other parts of the world for good scientific men, and to retain our own we must make conditions which are favorable to them. If a fund could be provided which could be used at discretion in advancing the salaries of specially valuable men, or which could be utilized in obtaining, even for a certain time, the services of certain well-known specialists from other institutions, in order to carry on particular investigations which are deemed of great importance, the situation would be much relieved. We should certainly be in a position, when necessary or advisable, to call to the islands some of the most prominent men of Europe or America.

It is unfortunate that this bureau at least two years ago had no exact knowledge of the qualifications of the young men studying in America, nor any information as to how many were fitting themselves for our work or how their laboratory courses were planned. This is especially so, as these young men are bound under contract to serve the government for as many more years

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as they were supported by it in the United States. An early knowledge of the men who are preparing themselves for a scientific career in the United States would enable us, in conjunction with the bureau of education, to guide their work so that they would have training in those lines which we need. It is also true that no exact provision in the appropriation bills has been made for these returning graduates, so that when they reach the islands, civil-service positions are not open to them, but they must be put on temporary employment, depending upon the money available. It would seem to be necessary to provide each bureau at an early date with exact lists of the young men preparing themselves in America, such lists to include all data as to the courses pursued, the grade of the work, the university in which it is being done, and the time of the expected return of the government students. By this means places could be provided in advance in each appropriation bill. This bureau will next year need to submit a number of such places for permanent adjustment.

It is hoped that the permanent committee of the Philippine Legislature will carefully consider the present needs and the future policy of the laboratory in such a way that a permanent plan for the future may be adopted and adhered to.

THE NEED OF BACTERIOLOGISTS FOR THE PROMPT EXAMINATION OF ARTESIAN WELL WATER.

The year showed a great increase in the demand for routine bacteriological examinations of waters from artesian wells. It seems evident that while the waters from this source are not free from organisms, yet they are so much better than the well, spring, or river waters usually used for drinking purposes by the people that the sinking of these wells marks an advance from a hygienic standpoint. The greatest difficulty still experienced is in the prompt transportation of samples of water to the laboratory, the result being that the reports generally show a worse condition than really exists in the fresh water. A remedy for this difficulty would be found in the providing of salaries for one or two bacteriologists, who should be engaged for the sole purpose of making cultures and such examinations as might be possible on the spot where the well is being sunk and who could then bring the cultures to the laboratory for study. The cost of this work could be spread over the charges for all artesian well work done during the year, and would therefore be met by the municipalities who had contracted for the wells. By this system the actual increased cost of any one well would not be great.

THE STUDY OF DISEASE IN THE PROVINCES.

Although the results in the biological laboratory for the past year have been gratifying, it nevertheless seems evident to me that we must endeavor so to arrange and increase our staff as to be able to keep one or more field parties in appropriate places in the provinces, so as to be able to study the broader and more fundamental problem of the geographical distribution of infections in the islands. One source of material should be found in the diseased individuals periodically gathered together for the purpose of segregating the lepers to be sent to the Culion leper colony. The director of the bureau recently accompanied the director of health on one of his trips and as a result was able to bring to Manila two interesting cases of enlarged feet. One of them, who was not on superficial examination considered to be such, ultimately proved to be a leper. These trips are always conducted with the greatest celerity, so as to avoid the payment of more than is absolutely necessary for the charter of the vessel, but so fruitful is this means of studying diseases as they exist in the provinces, and so grave are the consequences of error in diagnosis, that it is hoped that arrangements can be made to give the pathologist detailed for this work from the bureau of science a greater opportunity to study the cases and also the means of bringing to the hospitals of Manila such individuals as urgently need attention and who would furnish material for further study. I am convinced that it is only a question of time when this course would produce the most valuable results, whereas the additional expense would not be very great and it would be far outweighed by the certainty of diagnosis and the knowledge which would be acquired.

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THE RESULTS OF THE TRANSFER OF THE RINDERPEST SERUM HERD TO THE BUREAU OF AGRICULTURE.

The plan which went into effect on January 1, 1907, of transferring to the bureau of agriculture the care and immunizing of the cattle used in the preparation of antirinderpest serum, whereas the centrifugating, filtering, bottling, and testing of the serum are performed at the bureau of science, has proved itself to be an excellent one. Formerly the bacteriologist in charge of the serum work needed to devote practically all of his time to the routine connected with the herd of cattle, and as a consequence could do but little in advancing the technique involved in the production or in working out new methods of increasing the potency of the serum. The cost of the preparation of rinderpest serum is in the aggregate so great that it is distinctly a matter of economy to furnish ample means for investigation, as each improvement brings with it a resulting reduction in the charges. The increase in the potency of the serum by even one-fourth would reduce the number of cattle necessary for turning out the same amount by just that much, and would more than pay the salaries involved in the research.

One result in the past year has been that peritoneal washings are now employed in the immunizing of the serum animals, this procedure greatly reducing the cost of production and perhaps increasing the potency of the serum.

THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION AND THE FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE.

The meeting of the Philippine Islands Medical Association for 1908 was attended by twelve delegates from foreign governments, and the time was deemed to be ripe to form an association of medicine which should embrace all of the countries of the Far East. After the question had been thoroughly discussed, a constitution and by-laws were adopted which provided for biennial meetings in each of the component countries as would issue invitations, all the members of the regular medical societies within the zone of the organization, as well as representatives of the army, navy, and civil medical corps of the government represented in the society, being eligible to membership. The first meeting of the association will be held in Manila in 1910, and a large attendance may be expected. The formation of this association marks a step forward in the consolidation of the scientific interests of the Far East.

THE NECESSITY OF PROVIDING FACILITIES FOR EXPERIMENTS IN THE HYBRIDIZATION OF SILKWORMS AT THE LABORATORY.

The Singalon experiment station, where the silk breeding house has been established, is to be abandoned by the bureau of agriculture within something more than a year, and provision must now be made for providing sufficient mulberries at the new station to feed a considerable number of worms. However, when the future move is complete, it will be impossible for us to carry on hybridization experiments at such a distance from the laboratories as the location of the new station will be, and, as this work is of great importance, provision will not only need to be made on our own premises for a sufficient number of mulberry trees, but also for a silk house in which we can carry on experiments with several thousand worms. Indeed, the difficulty already experienced with the work, owing to the lack of food, is such that we can not keep enough hybrid material on hand to enable us to make a sufficient selection for breeding purposes. The cost of a permanent silk house would be from ₱1,000 to ₱1,500, and the bureau will place a request for such a structure in the next appropriation bill.

One fact is evident. Without mulberry trees there can be no silk industry, and it would be highly advisable if the bureau of education, through its division superintendents, would begin to encourage the planting of mulberry trees throughout the school districts as soon as the slips can be obtained. In a short time there would be many places in the archipelago where silk culture would be possible, and, as the outlay for buildings and equipment is not great, this should certainly be an industry which could be developed to large dimensions in the Philippines. Careful and systematic instruction in the care and feeding of the worms must be given, for if all precautions are not taken the latter soon deteriorate in size and even become diseased.

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The entomological work in the Philippine Islands is at present carried on by only two men, and when we consider how much more is spent on this important economic branch by other governments, we can only be surprised at the amount which has been accomplished in the islands.

A BOTANIC GARDEN.

Many, if not all, of the countries of the Far East have established botanic gardens, either directly in their principal cities or at least within easy reach of them. The importance of such botanic gardens to the economic development of the countries in question can not be doubted, and it is recommended that measures be taken at an early stage to establish a similar institution here. It would also be advisable, in cooperation with the municipal authorities, carefully to select the trees, shrubs, and plants to be set out for ornamental purposes in the new parks now being laid out around the walls of the city. A very good botanic garden for purposes of instruction could be established without additional cost by this measure, and it would also be useful to a certain extent for experimental purposes. An arrangement looking to this end could easily be made between the insular and municipal governments before the work has progressed too far to render a botanical selection of the ornamental plants possible. The botanists of this bureau would give their heartiest support to such a plan.

THE INCREASING USE OF CHEMICAL LABORATORY BY THE PUBLIC.

The public has made greater use of this division during the past year than ever before, the statistics showing 5,574 individual determinations for 1908, as against 3,064 for 1907. However, the mere comparison of numbers does not give an exact knowledge of the real significance of the development, the greatest gain lies in the increasing frequency with which persons interested in Philippine commodities come to us for consultation in regard to the values and uses of the products of the islands, and in the growing confidence felt in the accuracy and justness of our analyses. It is always the custom, the world over, if a chemical result is not just what is expected, or if substances are found in a material which others maintain are not present, at once without thought to blame the analyst and maintain the unreliability of his results. Chemists are human, and consequently they err at times, but it must be remembered that it takes years of training to develop a thorough chemist, that the men in the laboratory are specialists who have been selected just because they have the necessary education successfully to carry on the work, and that it may be safely assumed that when they make a statement this is very nearly certain to be a fact. That this is so is being realized in an increasing degree by the public, as their experience with laboratories grows and as they understand that a chemical analysis consists not merely in smelling of or in looking at a sample. The chemist is not gifted with second-sight and can not state offhand what a substance submitted to him really consists of, but the demonstration of its composition involves painstaking and often lengthy work.

A CENTRAL CEMENT-TESTING LABORATORY.

In my past annual report I called attention to the desirability of uniting all cement-testing work in one laboratory, both for the purpose of securing greater uniformity of results and in the interests of economy. This change is gradually coming about without action on our part. The city of Manila is now sending to us all of their work and has turned over their apparatus to us, and the bureau of public works is also doing the same. In the previous fiscal year we tested only about 24 samples, but in 1908 we have received over 1,200 in the past seven months. Only the purchasing agent, the port works in Manila, and the army and navy at present do not send their cement work to the laboratory.

It has been proposed, and it is now feasible under the law, to make a charge for cement testing to all bureaus, departments, and offices, so proportioned that the total cost of operation would be divided by the number of samples tested, and after thus fixing the price per unit to bill to the various bureaus their proportional amount according to the number of samples submitted. Under the conditions existing in the fiscal year 1908 we were not at liberty to charge bureaus of the insular government, but only had authority to collect from the municipalities, the army, and the navy, with the result that, as the growing

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work necessitated the engaging of additional men, the greater proportion of the burden fell outside the insular government. If all were to unite in one laboratory the cost per test would be as follows: 211 to 325 samples per month, ₱3.50 each; 326 to 500 samples per month, ₱2 each. The price per sample would increase rapidly with less work, as the highest paid employees would need to be retained, a reduction in the pay roll being possible only by dropping part of the laborers.

Certainly the average cost per sample, if enough were sent to the central laboratory for testing, would be sufficiently small to warrant more extensive and thorough tests of all cements purchased by the government, and besides, although we would of course charge a certain profit to private persons, nevertheless, contractors, importers, and merchants could afford to take extensive advantage of the laboratory. It is hoped that we can make a positive advance in this direction during the present year, and in order to prepare for the work the bureau has constructed a new cement-testing laboratory, using the building occupied by the former calf stable of the biological laboratory. This structure is admirably adapted for the purpose, and we now have a cement-testing laboratory which is fully equipped for a large volume of work and equal to any demand which can be made upon it.

GENERAL TESTING MACHINERY.

It is intended gradually to enlarge the scope of this laboratory so as to include other facilities for testing. With this end in view we have already installed a machine for the testing of cloth, twine, wire, rubber, and other lighter materials. The end of the building should be enlarged to accommodate a steel-testing machine with a capacity of 100,000 kilos, which would cost approximately ₱10,000, with all accessories. Rope and chain testing machinery could subsequently be added if necessary.

THE UTILIZATION OF PHILIPPINE FIBERS SUITABLE FOR PAPER MAKING AND THE DESIRABILITY OF AN EXPERIMENTAL PLANT.

Mr. Richmond has finally finished his work on Philippine fibers and fibrous substances in relation to their suitability for paper making, so far as our facilities will allow. However, all of our past work has been conducted on a very small scale. There seems to be no doubt, to judge from the numerous inquiries, that ultimately a great paper industry will be established in the islands. The large supplies of the different classes of bamboos, grasses, and other fiber-producing materials and the diminution of the available supply in other parts of the world will render this necessary.

As a result of our investigations here and of those of the British in Burma, it is certain that we have a number of raw materials which are entirely suitable for paper pulp manufacturing. We have agitated the question of paper production in the islands and have called attention to the possibilities of the industry here as fully as the means at our command will permit. The reason why no immediate development along the lines laid down by us has resulted is that capitalists desire particulars of actual commercial practice and not because the world's markets feel that the existing available supply is a permanent one.

Recent legislative attempts to regulate the wood-pulp tariff in the United States have been undertaken because of the decreasing supply of raw material and the increased cost of manufacturing wood pulp. The attention of paper trade journals and of pulp manufacturers during the past year has been very largely drawn to the question of new and cheaper substitutes for wood. If it were feasible, the time would therefore be ripe for us to take steps in the direction of the commercial utilization of our fibers. Mr. Richmond has come to this conclusion because of his knowledge of the existing conditions in the paper world, because of information derived from his studies here, and because the results already obtained, while they have attracted much attention, have not yet resulted in great industrial development. It is believed that the remedy would be found in our being able to make paper pulp on a larger scale.

The installing of a small plant of sufficient capacity to turn out 4 or 5 tons a week would not only provide us with an opportunity of making practical investigations of the pulping qualities of various materials, but it would also furnish sufficient pulp to supply paper makers with enough material for the determination in their own factories of the commercial value of each variety.

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Different raw materials could be converted into pulp with the same plant and by the same process. The working qualities of many fibers can only be ascertained to the satisfaction of paper makers by such practical trials. With proper facilities we could decide all questions asked by persons intending to put capital into the industry, before they venture upon it, and although the cost of production would be relatively high as compared with that of a factory with a large output, still a close calculation of manufacturing costs would be feasible. An expert, practical pulp maker and 6 unskilled laborers could carry on all of the ordinary operations. The plant would be as follows: One circular saw outfit; 1 chaff cutter; 1 digester, 2 meters in diameter, 2 meters high, suitable for digesting 1 ton of grass or bamboo; 1 breaking engine, for breaking and washing boiled pulp; 1 stuff tank, 2 meters in diameter, 1.3 meters deep, for storage of washed pulp; 1 strainer for straining the pulp and removal of impurities; 1 wet press machine for converting pulp into sheets; 1 baling press for packing sheets into bales for shipment; necessary shafting and gearing; 1 water tank and pump; galvanized iron tanks, scales, sundries. If steam power is not available from a source already existing, there would be required, in addition to the above, 1 vertical boiler, 100 horsepower; 1 steam engine, 100 horsepower. The estimated cost of the plant would be approximately ₱20,000, the labor, per year, about ₱6,500.

THE PRODUCER GAS PLANT.

The question of installing a producer gas plant is still an open one, and the discussion of this subject is given in detail under the section of weights, measures, and mineral analysis of the chemical laboratory. An appropriation of ₱10,000 was made for this purpose more than a year ago, and Mr. Gilkerson, engineer of the bureau, was detailed to the bureau of public works to perfect working plans and prepare specifications for the construction of a plant at the bureau by contract let in the islands. However, unfortunately, Mr. Gilkerson became ill and was compelled to stop work for about four months. In the meantime, so much new work accumulated in the bureau of public works that undivided attention could not be given to this matter even after Mr. Gilkerson's return to duty. However, as the installation of producer plants is rapidly progressing in the United States, we attempted to get all the information possible from other sources. It must be confessed that this information has been somewhat meager. One firm has submitted an estimate on the entire plant, which is practically prohibitive at present; one producer for water gas and another for producer gas, together with the necessary gas holders being estimated at ₱28,000. This figure seems absurdly high, in view of the estimated cost of what we can build a similar plant for here.

One fact seems to be evident. It will not be economical to burn producer gas under our present boilers to produce steam. This we always knew to be the case, but we supposed it could be done with Philippine coal at no greater expense than if we burned Australian coal directly; but in view of careful study in the light of recent work it seems doubtful if we could keep steam up with producer gas. Producer gas operating a gas engine directly is the only economical means and the only way of fairly demonstrating the method, and as we will inevitably need a spare engine when the new hospital and medical school are operated from one plant, it is only reasonable to add the cost of a gas engine to that of the producer and to operate under the best conditions for Philippine coal. The question of the type of gas engine to be employed would therefore also come under consideration. A gas engine certainly needs less attention and smaller outlay than one operated by steam.

We are still endeavoring to obtain data from various manufacturers in the United States, as we wish to make no mistakes when we actually begin constructing the plant, and, in the meantime, as opportunity permits, we will try to push our own plans to completion. One thing is certain. When the new hospital and medical school are completed we shall need an additional supply of good illuminating gas for laboratory purposes, and it is not economical further to enlarge our present system. One producer would therefore be operated for making water gas while the other would be used for producer gas, and as water gas would not be rich enough for laboratory purposes, it can be improved most economically by mixing it with a certain amount of gas from our present system. This would solve the problem of an ample and cheap gas supply for laboratory purposes. We have thought of installing regular gas retorts and of making gas from coal directly, but it seems evident that the care and repair of

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a battery of gas retorts would be so great in a small plant as to render the plan not feasible.

The importance of utilizing Philippine coals in the most economical way, the object lesson which a good producer plant would supply, and the undoubted fact that once one was in successful operation others would follow, warrant the expense even though we would ultimately find that we would need more money than the sum allowed and although we certainly will need a gas engine directly coupled to a new electric unit as well. The question is even of sufficient importance to warrant some one visiting the United States to obtain the necessary exact data which can not be learned at this distance.

THE IMPORTANCE OF INVESTIGATING THE PRODUCTION OF PHILIPPINE SUGAR IN THE FIELD.

The importance of the sugar question to the archipelago is so great that it would be advisable to provide funds for at least two years to place a regular laboratory staff of at least 3 chemists, with a man who has made sugar chemistry a life study at the head, in the field. Such a man could be obtained for a limited period, although work of this kind is in great demand in the sugar-producing countries.

THE DEVELOPMENT OF THE WORK OF FOOD AND DRUG INSPECTION.

Mr. H. D. Gibbs, formerly chief chemist of the San Francisco board of health, was engaged to take charge of the laboratory work in connection with the food and drugs investigations in August, 1907, and the bureau has profited greatly by his extended experience. It soon became evident that if the samples which were sent to the laboratory were to have even reasonably prompt and careful attention, more assistants would be needed. As a consequence, Mr. Francisco Agcaoili, a graduate of Cornell University, recently returned from the United States, was given an appointment and placed in the food laboratory. It was also the policy of this bureau when the work was first organized, to assist in every way by assigning certain of the samples to others whenever they had time to spare, but this did not result successfully at first, because the fragmentary character of such work necessarily greatly decreased its efficiency and, what is more important, increased the chances of error; and second, because the additional detailed work made necessary by this system occupied so much of the time of the chief of the chemical division that he was unable to carry on any experimental investigations himself or to give proper attention to the many other important problems with which he was concerned. Another factor also soon presented itself. Careful work in the examination of foods and drugs demonstrated that many of the present analytic methods adopted by official chemists were either imperfect or else needed revision in the Philippines, for nearly all products of this nature which reach the islands have been subjected to long voyages in the holds of vessels where they are not only exposed to high temperatures, but also to continuous agitation. However, any such revision of methods to be of value to ourselves requires not only much painstaking work but also necessitates a research knowledge of the principles of organic and inorganic chemistry such as is not usually possessed by men trained for analytic work. Foods and food products are complex substances and even individual chemical bodies contained in them are subject to decomposition and also to synthetic changes.

A concrete example is to be found in certain imported articles in which oil of wintergreen is used as a flavor. Such articles reach the Philippines with a considerable content of free salicylic acid, although we are confident in many cases that no such preservative has been added by the manufacturer. The reason for its presence is to be found in hydrolysis under the conditions surrounding the product. The determination of the rate of hydrolysis of methyl salicylate and kindred substances both in acid solution and in the presence of alkalies (including carbonates and bicarbonates) becomes necessary before the fact as to whether salicylic acid has been added to the product as a preservative, can be ascertained. Another case is to be found in the separation of morphine and codein, for the reactions and consequently the quantitative estimation of the former alkaloid are obscured in the presence of codein. Therefore, the correction of the methods now in use becomes imperative and such corrections necessarily involve extended investigations.

The cases here cited are only instances of many more which have arisen within the past year and would in themselves keep the time of one investigator

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fully occupied without giving any consideration to the problems of native food products and imported Chinese and Japanese medicines, the labels on the containers of which latter are in a foregn language and the composition of which is at present entirely obscure.

These experiences have shown us that we can accomplish but little that is permanent and absolutely reliable in this important branch of the laboratory work unless the policy is pursued as rapidly as possible of greatly strengthening and enlarging its scope. With this end in view, it should be made a division of the bureau, the chief of which must be a thoroughly experienced man with a broad scientific training, who should devote his time exclusively to the investigation of the problems which arise daily and to the overseeing and checking of the work of his subordinates on whom the routine work of investigations and analyses would fall. The chief of this division should receive a salary sufficiently large to insure his remaining a number of years, as the value of his services greatly depends upon his specific knowledge of the conditions which surround this work in the Philippines and such knowledge can only be gained by experience. With such an organization the quality of the work will be of the best and the quantity will only depend upon the number of assistants the government is willing to authorize. The commercial interest involved, the value of the imports which are held awaiting decision, and the losses which result from the rejection of any shipment are sufficiently great to warrant the expense of the best type of organization.

The expansion of this work, apart from the limits imposed on it by the amount available for salaries, is also greatly hindered by lack of space. We are practically now at the limit of our available room for chemical work in the laboratories, as so much of the space designed for this purpose has necessarily been turned over to other divisions of work, and so the increase in the division of foods and drugs must be accompanied by a corresponding enlargement of the building. The wing which has so urgently been advocated in the past therefore becomes doubly necessary. Until this addition is constructed, a very great increase in the number of chemists engaged in the analysis of foods, foodstuffs, and drugs will not be feasible, although the organization proposed above can be perfected and so no time be lost when future expansion is possible.

THE PHILIPPINE MUSEUM.

The bureau of public works, in April of this year, finally removed all of their stores from the ground floor of the building which we have obtained for museum purposes, and as soon as this was done the plan at once suggested itself of enlarging the scope of the museum and of utilizing a part of this space for an exhibition of woods and other collections relating to forest products and also for the natural and agricultural resources of the islands. This space needs extensive repairs, as it always has been used as a warehouse, and is dark and unsightly, but the sum of approximately ₱12,000 will not only place it in proper condition but will also provide about 10 pairs of large museum cases of the best pattern. Bids have already been advertised for this work. This plan has the hearty cooperation of the bureau of forestry and the latter will assist both with funds and exhibits.

It should be realized that we have in this museum the nucleus of a great national undertaking, and it should be fostered accordingly. The present exhibit is already a very good one and the possibilities of development, when we consider the great diversity of peoples and the variety of products in the Philippines, are without limit. As soon as cases are available, all divisions of the bureau of science whose work makes it possible will assist in preparing good specimens and such funds as can be spared by the bureau for the purchase of museum material will be utilized. However, although the building we now have is a fairly large one, it being of 2 stories and about 150 feet long by 50 feet wide, it is evident that in a very short time all available space will be taken if we wish to have a representative museum of the greatest value to the people. Moreover, the location is far from desirable. It is in the business portion of the city where visitors from abroad seldom come, it is not a structure which per se would attract the stranger, and is at a great distance from the other buildings of the bureau of science. Another fact should be emphasized. Such development as the museum can expect must at present be due solely to the meager funds available on the regular appropriation of the bureau of science and to gifts and exchanges.

The undertaking is of sufficient importance to have an appropriation set aside for its own specific uses, to acquire materials, to engage specially quali-

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fied persons to gather special exhibits, and above all to render feasible the proper organization of the commercial section, mention of which was included in my last annual report. A proper commercial exhibit, with which should be combined a far-reaching center of exact commercial information, would be of the greatest value in the development of the islands.

One plan I believe should be inaugurated as soon as possible in connection with the museum, and that is a survey from a standpoint of material development of each province of the archipelago. To take a concrete example, the photographer of the bureau recently made an extended trip to La Laguna Province, where he obtained excellent views of all of the industries carried on in that portion of the islands. This set includes cocoanut plantations, oil production, furniture and hat making, roads, people, and methods of transportation. Properly to utilize such a collection, a study of La Laguna Province should be made, such a study to include the area under cultivation and available uncultivated land, the value of such land for agricultural purposes, the value of the chief products grown in the province, the means of improving the present methods of production, the quality, quantity, and price of labor, the forest products, mineral waters, water power, transportation, scenery, public health, cattle and beasts of burden—in short, everything of interest in the material development of this district. When all these data are properly brought together they should be published with the series of views above referred to. Gradually, step by step, we could thus go over the various provinces of the archipelago and by this means give accurate and complete descriptions which would be used as a basis for the plans of all who are interested in this portion of the world. The existing provincial officials, the school-teachers, the constabulary and other members of the insular government could lend their assistance in this work, but the first, fundamental prerequisite is to have some one man make a preliminary survey in each province, organize the work, provide for the shipping to the laboratories of materials for investigation and for the collecting and sifting of the various reports which are received. Obviously also the museum, if this plan were carried out, would receive rapid accessions from all parts of the archipelago.

It would seem advisable now to consider the construction of a permanent building for museum purposes. Probably the cost could in part be met by a sale of the present structure on Calle Anloague, which is admirably adapted for business purposes. It is hoped that the permanent committee of the legislature will study the present museum and consider not only plans for its healthy growth and the increase of the staff devoted to this work, but also plans for its permanent future. It seems unfortunate that in the past so many collections which are difficult to duplicate have left the islands.

A FLOATING LABORATORY FOR THE WORK ON FISH AND FISHERIES.

The importance of thoroughly studying our marine resources and industries has been brought forward in the past annual reports and need not be repeated. The work this year has demonstrated that we have been much handicapped by lack of proper facilities in the field. A consultation with some of the staff of the U. S. S. *Albatross*, detailed for fishery investigations in Philippine waters, has only confirmed me in my belief that the most economical and at the same time adequate means of marine exploration consists in constructing properly equipped scows, which should contain living quarters, a small laboratory; aquaria, pumps, a diving outfit, sailboats, a naphtha or petroleum launch, and all necessary accessories. Such a scow or scows could be anchored in favorable, sheltered locations and the work could be systematically prosecuted from them. When a district is thoroughly surveyed the floating laboratory can be towed to some other place, and so, step by step, the exploration of the field completed. The central laboratory and collections at Manila would form a basis in which to work up materials as they came in. The results already obtained certainly show that the work in fish and fisheries should be fostered, that this branch should be made a division of the laboratory, and that a larger staff and adequate facilities should be provided. An aquarium in Manila would greatly aid in the work and add to public interest, and it seems reasonable to recommend that the proposed new wing mentioned in my last annual report be so extended as to include not only an aquarium for the public, but also laboratories for marine biological investigation. At present the plans for the structure contemplate only a rather large museum room with limited space for laboratory work in connection therewith.

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THE DEVELOPMENT OF THE LIBRARY.

The library is the central point around which the work of the divisions of the bureau centers, but it is gratifying to note that during the past year, especially because of the establishment of the Philippine Medical School, a growing tendency has been manifested by others, not connected with the bureau of science, to make use of its facilities. It has been the endeavor from the beginning to give to the government of the Philippine Islands a well-rounded, working, scientific library, and the present condition of this division of the bureau demonstrates that this mission is being fulfilled. Certainly, as we add new sections of work, we find weaknesses which must be corrected. This has naturally been the case this year in the branches of ichthyology and marine biology, in anthropology, paleontology, and geology, and the additions which we needed to purchase even reasonably to meet the wants of these specialties have increased our book orders considerably. However, the library as it now stands represents an enormous amount of labor, both in obtaining complete sets by purchase and in arranging for gifts and exchanges. Its value is correspondingly large, and so great has been our success in completing series of books that it is safe to say that the collection could not be duplicated within a period of time many years longer than that which has elapsed since the beginning of the bureau. It must also be remembered that this library must inevitably form the nucleus of the scientific library which will need to be established in connection with the new university.

Shelf room will be approximately fully occupied by about 1910 or 1911, and then the necessity of enlarged quarters will arise. This necessity can either be met by providing room in the proposed new wing for the photographer and the director of the bureau, thus giving us two more rooms for library purposes, or by putting the library itself in the new wing, reserving the present space for collections. The latter plan would be preferable, as we could thus furnish fireproof quarters, directly accessible from outside to the public, which now has to come through the laboratory building and upstairs before it can have access to the books. The government should earnestly and seriously consider the great value of this library and its necessary functions and should form some definite plans as to its future expansion.

THE PHILIPPINE JOURNAL OF SCIENCE.

The plan of issuing the Philippine Journal of Science in 3 sections has been most successful, and has encouraged subscriptions and exchanges. Each section has 6 numbers to the year, and we had an ample amount of good material to fill the Journal. A system of editorials on topics which were not ordinarily printed from the laboratory and other institutions has been begun with volume 3, and will be continued. The editing of the Journal in 3 sections has necessarily thrown much work on the director, although he has been cordially assisted by the members of the staff, as an effort must constantly be made to keep up the standard and to supply good editorials, and with the growing work of the bureau it is becoming more and more difficult for him to give the necessary time. We have secured the services of a thoroughly trained stenographer and typewriter, who is familiar with the foreign languages, to take over the copying and make-up of the Journal, and this move has given considerable relief, but nevertheless the editorial work will always be a great task where attention must be given to so many outside details. A number of monographs have been submitted on ethnological subjects which were of too comprehensive or too specifically technical a nature to be placed in the Journal, and these have been published as a continuation of the series of the ethnological survey. One of these, Doctor Saleeby's History of Sulu, will be of especial interest to the public, and its sale will show how successfully we can enter upon publications of that class. There seems no doubt but that we can regularly edit and publish volumes of general interest to the Philippines, and it would be in the interests of economy to organize a regular division of work to take charge of the proof reading, advertising, mailing, and the work in general of bringing before the public our Journal and the other publications which are issued. The success of any such enterprise consists largely in judicious advertising, and with our present force, as we have no one regularly to assign to the work, this is far from satisfactory, nor do we obtain the results that we should.

The number of subscribers to the Journal is 234, and the number of exchanges 357.

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THE PROPOSED NEW WING OF THE LABORATORY BUILDING.

The urgent necessity for an addition to the present bureau of science building has been pointed out in previous annual reports. As each year passes and the work of the bureau continues to expand, the need of such space becomes more and more evident. The library will soon have all of its shelf space filled; the herbarium has now completely occupied one room and some cases have been placed in another; the entomological collection is practically at its limit; the collection of fishes takes a large part of the room devoted to pathologic exhibits, and when identified specimens return from the United States there will be no place to put them; the division of mines has not been able properly to extend its work because of lack of floor space, and when Dr. W. D. Smith, now on leave in Europe, returns with his collection of identified paleontologic material we will be hard put properly to accommodate it. Further expansion of the chemical laboratory is also practically impossible without vacating some of the laboratory rooms used for other purposes. These collections are now so valuable and of such fundamental importance for scientific work in the islands, and also for the development of the Philippine University, that I hope the appropriation for the construction of a suitable wing will not be delayed beyond the next session of the Legislature. It would be well, at the same time, to consider the advisability of building the structure necessary for the Philippine Museum in connection with this wing.

BIOLOGICAL LABORATORY.

THE STAFF.

A few changes have occurred in the staff during the year. Doctor Edwards resigned March 12, 1908, and Doctor Teague was appointed to fill his place on June 27. Dr. Vernon L. Andrews was also appointed an assistant in the laboratory to fill a long-existing vacancy, and sailed from the United States for Manila on June 23.

It seems necessary again to point out the difficulty and the long delays experienced in securing well-trained and capable men to accept positions in the biological laboratory for the salaries at present offered. Several of the large research laboratories in the United States are able to offer higher salaries to competent men than those appropriated for the laboratories here; hence the difficulty arises of securing capable men to accept positions in a tropical country where the risks to life and to health are greater and the financial remuneration not much more or even less than in the United States.

Dr. R. P. Strong, chief of the biological laboratory, was absent from Manila for the greater part of the year, and during that time the laboratory was under the direction of Dr. W. E. Musgrave. Almost the entire time of his vacation was spent in connection with the study and development of laboratory work and of tropical medicine. The most important scientific institutions in Milan, Berne, Paris, Munich, Leipzic, Vienna, Dresden, Berlin, Hamburg, London, Liverpool, Oxford, Cambridge, New York, Boston, Baltimore, and Philadelphia were visited and the work of these institutions examined into. Particular attention was paid to the several foreign schools of tropical medicine and studies in connection with this subject were performed, particularly in Hamburg and in northern Africa and India. In all of these scientific institutions visited much courtesy was shown to Doctor Strong and much valuable information and material was obtained. It is hoped that this bureau will in the future have an opportunity in turn to receive visitors from the same institutions and to render in return all possible assistance during their stay in the Philippines. Many valuable pathological specimens, etc., were secured, which will be of great value in connection with the work of the medical school.

Doctor Strong attended the Fourteenth International Congress of Hygiene in Berlin in September, and reported upon the subject of protective inoculation against plague. In addition, in accordance with instructions from the governor-general and the Philippine Commission, he acted as delegate for the government of the Philippine Islands at this congress. The Annual Natur-Forscher Versammlung in December was also attended. Much valuable information was obtained from these meetings. The hygienic exhibition was particularly instructive and furnished an excellent opportunity for the observance of progress in scientific work and particularly of all new forms of laboratory apparatus, etc.

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ROUTINE WORK.

The most important change in the routine of the laboratory has been the transfer of the general autopsy work to the Philippine Medical School, and now the bodies of all individuals for autopsy, except those who have died of acute infectious diseases, are removed to the medical school morgue for examination. However, this laboratory still undertakes the diagnosis and autopsy of all acute infectious diseases. As during the previous year, considerable time has been spent in work in connection with the suppression of the cholera epidemic and the methods employed in the bacterial diagnosis of the disease, the preparation and furnishing of cholera immune sera for diagnosis and the prophylactic inoculations have been fully described by the chief of the laboratory in the Philippine Journal of Science for October, 1907, page 413.

During the cholera epidemic, a systematic analysis of the waters of sewers and esteros was made with a view of determining whether the spirillum of Asiatic cholera was present in the water of any of them and hence whether these waters were an important factor in continuing the epidemic. Forty analyses of the waters of esteros made during the month of January, and the cholera organism was demonstrated 3 times. Since then these infected sewers and esteros have been analyzed repeatedly with negative results. From time to time there was isolated from the esteros a number of spirilli which resembled morphologically *Spirillum cholerae asiaticae.* Some of these were not pathogenic for guinea pigs and did not liquify gelatine. Some of the other spirilli isolated, which resembled the cholera organism in many of their cultural properties possessed multiple flagella and did not show characteristic reactions with cholera immune sera. They were not regarded as being cholera vibrios. The reaction of the organism upon ordinary cholera medium was found to be one of the least satisfactory methods of differentiating the different strains of cholera spirilli. The serum reactions are considered to be the most reliable means we at present possess for the diagnosis of the true cholera.

Nine traveling excursions through various provinces of the islands have been made in company with a representative of the bureau of health for the bacteriologic diagnosis of leprosy cases. In all, 1,875 individuals were examined and in 1,571 a positive bacteriological diagnosis of leprosy was established.

A number of valuable specimens have been added to the pathologic museum during the year. Among these may be mentioned excellent specimens of gangosa, mycetoma and Kala-azar and many of animal parasites, etc. The museum has been completely catalogued and indexed, and constitutes a valuable adjunct in the study of tropical pathology.

Many bacteriological examinations of water from various bureaus of the government and from different sources have been made during the past year; for example, for the bureau of public works, which sent in a large number from artesian wells; for the bureau of health, including those from sewers and esteros, and bottled mineral waters, lemonades, etc. Several examinations of water from artesian wells for the United States Army were also performed. Complete bacteriological examinations were made of several waters from sanitary resorts in the islands; among these were those of the water of Sibul Springs. While no protozoa were found present in this water, it was established that it possessed no substances which retarded bacterial growth in any manner. If the water is to be bottled for sale for drinking purposes, thorough sterilization before bottling will be necessary.

Owing to the lack of transportation facilities the samples of water sent from the provinces for examination were frequently delayed and often several days elapsed before they reached the laboratory. Perhaps largely on this account very few provincial waters, from a bacteriological point of view, were potable. However, in a few cases, notably an artesian well in the province of Bulacan and one sunk by the United States Army at Fort McKinley, the water proved to be excellent for drinking purposes, both from a chemical and bacteriologic standpoint. In regard to the waters in general from the artesian wells it may be stated that while many of them could not be considered potable from a bacteriologic standpoint, it seems probable that the high bacteria counts in the majority of them were dependent chiefly upon the method of collection of the samples and in their delay in reaching the laboratory. The waters sent for examination from the artesian wells were far superior from a bacteriologic standpoint to any others received from other drinking sources.

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PUBLICATIONS AND INVESTIGATIONS.

Owing to the fact that seven of the staff of the laboratory have been engaged in teaching at the Philippine Medical School during the year, less time has been available for research work. However, the hospital of the medical school has furnished much valuable material for scientific investigation to several of the laboratory staff.

The following investigations have been completed by the laboratory during the year and have been published: "Studies in Plague Immunity," by Richard P. Strong; "The Recent Trend of Immunity Research," by Harry T. Marshall; "Infant Feeding and its Influence upon Infant Mortality in the Philippine Islands," by W. E. Musgrave and George F. Richmond; "Gangosa in the Philippine Island," by W. E. Musgrave and Harry T. Marshall; "The Investigations Carried on by the Biological Laboratory in Relation to the Suppression of the Recent Cholera Outbreak in Manila," by Richard P. Strong; "Yaws: A Histologic Study," by Harry T. Marshall; "The Etiology of Mycetoma," by W. E. Musgrave and M. T. Clegg; "A Series of Cases of Tropical Infantile Dysentery with a Hitherto Undescribed Bacillus as the Causative Factor," by Fred B. Bowman; "An Investigation of the Quantitative Relationships Between Agglutinin, Agglutinoid, and Agglutinable Substance," by Y. K. Ohno; "Peculiar Cases of Traumatism of Internal Organs, Some Due to Tropical Conditions and Practices," by Maximilian Herzog; "The Influence of Symbiosis Upon the Pathogenicity of Microöganisms," by W. E. Musgrave; "Studies of Cholera," by Harry T. Marshall; "A Biological Study of the Water Supply of the Philippine Islands, with a Description of a New Pathogenic Organism," by Ralph T. Edwards; "Filtration Experiments with the Virus of Cattle Plague," by E. H. Ruediger.

SERUM SECTION.

The work in connection with the care and immunizing of the cattle used in the preparation of antirinderpest serum, which was transferred to the bureau of agriculture January 1, 1907, has been continued by that bureau throughout this year. The bureau of agriculture sends to the bureau of science, in sterile bottles of 5-liters capacity each, all serum after it has been separated from the clot. This serum is centrifugated, filtered, bottled, and tested for sterility at the bureau of science. At intervals of about three months, the potency of the serum is determined at the laboratory on nonimmune bullocks. Nearly all the time of one assistant is occupied in centrifugating, filtering, and bottling the antirinderpest serum. However, it is hoped that many of the difficulties in this work will soon be overcome by the arrival of a large centrifugal machine carrying 10 liters of fluid and by the arrival of another large filtering apparatus which will more than quadruple the facilities at the laboratory for carrying on this work. It is the intention of the bureau to attempt the centrifugation of fresh citrated antirinderpest blood and it is hoped that by this process the volume of serum obtained from each animal will be greatly increased.

VACCINE VIRUS.

The preparation of vaccine virus has been continued steadily throughout the year and no difficulty has been encountered in supplying the demand. During a slight epidemic of variola in Manila, variola material was transformed into variola vaccine, or vaccine virus in April, 1908. After having been passed through 5 calves, 22 persons were vaccinated with the material. Twelve were secondary vaccinations and 10 were primary. All but one gave positive results, and aside from a slight generalized eruption resembling varioloid in one case, no bad effects followed. Since the month of May the strain has been regularly used in the preparation of vaccine virus with good results. The material from the fifth calf is still being used as stock virus.

BACTERIAL VACCINES AND PROPHYLACTIC SERUMS AND MISCELLANEOUS PRODUCTS OF THE LABORATORY.

Cholera prophylactic, plague prophylactic, gonococcus vaccine, staphylococcus aureus vaccine, staphylococcus albus vaccine, and staphylococcus citreus vaccine were prepared in moderate quantities. Antidiphtheritic serum, antitetanic serum, anticholera serum, antityphoid serum, antiplague serum, and antidysenteric serum were made in amounts sufficient to supply the demand.

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Anthrax vaccine, tuberculin, both human and bovine, and mallein were also prepared. Typhoid reagent, paratyphoid reagent and cholera reagent (killed cultures) for agglutination, were continually kept on hand. Agglutinating and bacteriolytic serums in liquid and dried form for the purpose of the diagnosis of infectious diseases, normal horse serum, normal ox serum, and normal carabao serum have also been added to the list of preparations of the laboratory.

INVESTIGATIONS OF THE SERUM SECTION.

The study of the etiology of rinderpest was carried on by Doctor Ruediger, but so far its causative factor remains unknown. It was found that the infectious material present in the blood of the sick animal does not pass through any of the ordinary Berkefeld filters, while that from the peritoneal washings obtained with 0.25 per cent potassium citrate solution passes through all the Berkefeld filters, but does not pass through the Chamberland filters.

Having found the peritoneal washings of sick animals highly virulent, these were employed in immunizing serum animals, which has greatly reduced the cost of production of antirinderpest serum, since a larger amount of virulent material for immunization may be obtained from a single animal. The cost of this serum has been further reduced since it has been shown that the time of immunization of the serum animals may be shortened without decreasing its value.

ENTOMOLOGICAL SECTION.

Mosquitoes.—Mr. Banks was occupied during the entire year mostly with systematic and economic work on *culicidæ* or mosquitoes. The importance of mosquitoes in the transmission of fevers among mankind has made it more than ever necessary to work out, first, the systematic classification, and, second, the life histories of *culicidæ*. Several new species of the former family were discovered. The results of the investigations with reference to malaria-mosquitoes were published in the Philippine Journal of Science, Vol. II, No. 6, page 513, under the title "Experiments in Malarial Transmission by Means of *Myzomyia ludlowii* Theob."

Reports of an outbreak of malaria in Lepanto-Bontoc came to the knowledge of this bureau at the beginning of the year 1908. Mr. Banks was sent to this province for the purpose of determining if possible the species of mosquito transmitting the disease. The result obtained was to the effect that a supposedly purely salt water mosquito (*Myzomyia ludlowii* Theob.) was found breeding in river water and was the cause of the malarial transmission at this place.

Mr. Banks left Manila on May 15. Arrangements have been made for him to visit the British Museum, during his vacation, and several other foreign institutions on the mainland of Europe for the proper identification of several thousand specimens belonging to the laboratory collection.

Crops destroyed by insects.—Numerous questions relating to field crops destroyed or attacked by insects were investigated during the year. One of the entomologists was sent to study the damage in each instance, to learn its nature and to provide means to correct and prevent the pestilence.

Bumblebees.—For a long time efforts were made to secure from the United States bumblebees for the purpose of fertilizing the red clover which had been introduced into the mountain districts of Benguet Province. It was found that although this variety of clover throve very well in this region, it never produced any seeds for the reason that it is fertilized by a special kind of bumblebee; hence it was thought necessary to introduce this insect from the United States. The experiment proved an extremely difficult one, in view of the fact that the bees had to be shipped in cold storage. In December, 1907, an excursion was undertaken to Benguet Province in connection with this work. As yet no report can be made as to whether the bees have thrived in their new habitat.

Silkworms.—Several years ago efforts were made to introduce silkworms into the Philippine Islands with a view of establishing a new industry. There were many difficulties to overcome, the main drawback being the scarcity of mulberry trees (*Morus alba* Linn.), the leaves of which constitute the natural food of the silkworm. A few old specimens of trees were found in Manila, and from these the bureau of science in cooperation with the bureau of agriculture and the department of sanitation and transportation, made cuttings and finally succeeded in obtaining a sufficient number of plants to carry on silkworm experiments to a moderate degree. Every effort was made during the year to

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advance the experiment. The first silkworms were introduced from Ceylon in February, 1907, several previous efforts having failed. In Ceylon the form of *Bombyx mori* Linn. produced seven generations in a year, but Mr. Schultze has succeeded in raising eight and a half generations in Manila, and by careful selection has been able to keep them alive to the fifteenth generation without the introduction of new blood. As the Ceylon silk of this multi-voltine species is inferior in grade to the silk of the Japanese monovoltine variety, it was thought worth while to attempt to improve the grade of the silk, but at the same time not to reduce the number of generations to any considerable extent. With this end in view, Mr. Schultze has carried on extensive experiments in hybridization and has succeeded in securing much better cocoons with reference to general shape, color, and quality of silk, the only drawback being that the monovoltine character of the Japanese variety seems to be dominant. For this reason only one-tenth of the hybrid eggs will hatch at the regular time of the multi-voltine Ceylon species. This difficulty could more easily be overcome if selection could be made from more hybrid material.[a]

Therefore, if the establishment of a silkworm industry in these islands is to be considered, it will be advisable to carry on experiments in hybridization on a much larger scale. One thousand cocoons of the Ceylon variety give about 50 grams of good silk; the same number of hybrid cocoons will give about 80 grams of silk. The price of silk per pound of this quality ranges from ₱5 to ₱8 Philippine currency in the foreign market, according to the quotations from large silk firms of the United States obtained through the Bureau of Insular Affairs.

The services of a Japanese woman were secured in October, 1907, to teach a Filipino girl the reeling of silk; subsequently the bureau engaged a Filipino girl, who will be able to give instruction outside.

In December, 1907, a disease among silkworms in Nasugbu was reported to the bureau, but on investigation it was found not to be serious, but was due to neglect on the part of the care taker.

A large amount of routine work, such as recording, mounting insects, drawing, rearranging the collections, etc., has been performed by the section of entomology.

Insects injurious to sugar and other plants.—Information relating to insects injurious to sugar and other economic plants was furnished to the bureau of agriculture, and in relation to the destruction of locusts, to officials of several provinces.

Collection of specimens.—During the entire year systematic collecting has been very much neglected; in fact, the laboratory depended solely on private collectors, members of the bureau of forestry, and others. The only opportunities for collecting by the laboratory staff were during the few days spent in the field on other investigations and on Sundays and holidays. In October, 1907, the bureau of science secured a student from the Manila High School to help on the routine work.

At the present time the quarters of the section are extremely crowded, and as unidentified specimens do not take so much space as identified and classified material, the laboratory has become more and more cramped as time goes on. With the return of the material taken away by Mr. Banks, it will be necessary to increase the number of insect boxes at least 50 per cent.

Investigations.—The following investigations have been completed during the year: "Experiments in Malarial Transmission by Means of *Myzomyia Ludlowii* Theob.," by Charles S. Banks; "New and Little Known *Lepidoptera* of the Philippine Islands," by W. Schultze; "Life History of Certain *Coleoptera*," by W. Schultze; "A Mosquito which Breeds in Salt and Fresh Water," by Charles S. Banks; "Biology of Philippine *Culicidæ*," by Charles S. Banks; "Life Histories of Some *Philippine Cassididæ*," by W. Schultze.

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[a] It may not be out of place here in conjunction with the results obtained in our silkworm experiments, to quote the first sentence of Toyama summarizing the results of his experiments: "Of the various characters of the silkworm, some strictly follow Mendel's law of heredity, while others are governed by other laws. The color of the cocoon and the egg and the various larval markings belong to the former category, and the shape of the cocoon and the *brood-characters* such as *uni*, *di*, and *multi-voltine*, etc., to the latter."

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THE BOTANICAL SECTION OF THE BIOLOGICAL LABORATORY.

Mr. Elmer D. Merrill was absent from the Philippines on leave for the greater part of the past fiscal year, having left Manila on May 23, 1907, returning March 15, 1908. During his absence he spent two months in Washington, working over the Philippine material in the United States National Herbarium, and about one week at the New York Botanical Garden, going over matters pertaining to Philippine botany. Later he studied a few Philippine types at the Gray Herbarium, Cambridge, Mass. He received authority from the Philippine Commission, before leaving Manila, to return via Europe, and accordingly he left New York on October 22, arriving in London a week later, and remaining in that city until January 7, examining the types of Philippine species in the Kew Herbarium and at the British Museum. From London he proceeded to Berlin, with a single day's stop at Leyden to examine some of Blume's types. Mr. Merrill then stopped in Berlin and worked at the Botanical Museum for two weeks; thence he went to Geneva, staying one week in the latter place studying various types in the De Candollean Herbarium, the Boissier Herbarium, and the Herbarium Delessert. He visited Florence after visiting Geneva, doing some botanical work there, and sailed for Hongkong from Genoa.

All of the work of the botanical laboratory and herbarium devolved on Doctor Foxworthy during Mr. Merrill's absence, the former having been in charge of the botanical work for nearly ten months. Doctor Foxworthy, having no assistance, necessarily spent much of his time in routine work, but nevertheless he succeeded in finishing and publishing a valuable paper on the histology of the most important Philippine timbers, and made considerable progress on the taxonomy of Philippine Gymnosperms and *Casurinaceæ*.

Mr. Merrill, while in Washington, received directions from Manila to search for an assistant in the botanical work, and after a thorough consideration of the situation the place was offered to Dr. C. B. Robinson, of the New York Botanical Garden, who accepted the position as economic botanist, and arrived in Manila March 4, 1908. Doctor Robinson is thoroughly fitted for the position, having devoted much of his time for the past two years to the extensive Philippine collections made by R. S. Williams for the New York Botanical Garden, and accordingly has a large knowledge of Philippine plants, so that he need lose no time in acquainting himself with the local flora. Owing to Mr. Merrill's absence a great amount of work had accumulated upon Doctor Robinson's arrival, and so in the beginning he has largely been engaged in systematic studies, but he will take up economic work as soon as conditions warrant that course of action.

Doctor Foxworthy left for Singapore and Borneo shortly after Mr. Merrill's return, he being authorized to make extensive investigations on the vegetable resources of Borneo, with the special object of correlating, as far as possible, Philippine and Borneo timbers. He will also devote some time to the questions of the production of the various resins, of rubber, and to the tan-bark industry.

ECONOMIC WORK.

Although systematic work has predominated, as in previous years, one of the ultimate objects of the botanic work, the economic side, has not been lost sight of. More attention can be given to this branch, but economic investigations without a thorough knowledge of the names and relationships of the plants considered would not be of lasting value. Material, including tan-barks, rubber-producing vines, perfume-producing plants, gums, resins, and medicinal plants, has been collected in bulk, as in preceding years. The chemists of the bureau have begun investigations with much of the material so secured, and some important papers have been published by them. Doctor Robinson has studied and reported upon a disease of sugar cane which has appeared in Laguna Province, and which is caused by the smut *Ustilago sacchari*, and has recommended measures to hold it in check. These measures have been applied with excellent results in the regions where the smut is known to occur.

Doctor Copeland has continued his work on the bud rot of the cocoanut, which has assumed serious proportions in the provinces of Laguna and Tayabas, this work having been done under the bureau of education, but in connection with the bureau of science. Doctor Foxworthy has devoted as much time as possible to the histology and classification of Philippine commercial timber.

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SYSTEMATIC WORK.

The systematic work accomplished during the past year has been very extensive and many papers have appeared in the botanical section of the Philippine Journal of Science, others of a systematic nature are either in press or in course of preparation. One piece of work on the Philippine plants gathered during Wilke's expedition was written by Mr. Merrill while he was in the United States and during his visit to London. Together with Mr. R. H. Rolfe, of the Kew Herbarium, Mr. Merrill wrote a joint paper on the results secured after examining the Philippine material in the Kew Herbarium.

THE HERBARIUM.

The herbarium has been augmented as rapidly as in past years. The total number of accessions for the fiscal year ended June 30, 1908, was 15,132, this being slightly less than those recorded for the preceding year. The accessions were as follows:

Collections of the employees of the bureau of science	1,791
Collections of the employees of the bureau of forestry	4,012
Miscellaneous Philippine collections	3,397
Foreign material, received in exchange	5,932
Total	15,132

The employees of the bureau of science made comparatively small collections. This was largely because of Mr. Merrill's absence, which left only Doctor Foxworthy in Manila. The miscellaneous Philippine accessions include Philippine plants received in exchange, as gifts, and for identification, and include 650 specimens collected by Mr. Elmer; 1,430 from the Williams Philippine collection, received from the New York Botanical Garden; 187 of Loher's Philippine plants, from the United States National Herbarium; 104 of Cuming's Philippine plants, from Kew; and Mrs. Clemen's Mindanao collection, about 875 specimens.

The foreign exchanges sent to us during the past year have been most valuable. Besides the exceedingly important material mentioned above under miscellaneous Philippine accessions, valuable Formosan specimens have been received from the Botanical Institute of the Imperial University, Tokyo; Australian material from the Botanic Garden, Sydney; and especially large collections from the Royal Botanic Gardens, of Berlin, and the Museum of Natural History, Paris. A large number of miscellaneous specimens from the Indo-Malayan region, many of them from old collections, as well as about 300 numbers of Volken's more recent Caroline Island collection, were included in the material from Berlin, and that from the Paris Museum contained a large series of plants collected in southern and Indo-China by Gaudichaud and Callery, Indian specimens collected by Jacquemont, as well as a number of Wallich's numbered Indian plants. A considerable amount of Hooker and Thompson's Indian material was also included.

The total number of mounted specimens in the herbarium is 61,045, of which 39,163 are Philippine and 21,882 are extra-Philippine.

EXCHANGES.

No general distribution of duplicates has been made in the past year, although some material, as follows, has been sent to specialists for study or for purposes of identification:

Murrill, W. A., New York Botanical Garden, fungi	625
Brotherus, V., Helsingfors, Finland, mosses	123
Stephani, F. Leipzig, Germany, *Hepaticæ*	53
Radlkofer, L., Munich, Germany, *Sapindaceæ*	31
Engler, A., Berlin, Germany, *Araceæ*	40
Hieronymus, G., Berlin Germany, *Selaginella*	30
Diels, L., Berlin, Germany, *Menispermaceæ*	20
Ames, O., North Easton, Mass., *Orchidaceæ*	306
Total	1,228

All of our mounted material of *Eria* and *Dendrobium* has been sent to Dr. Fr. Kranzlin, of Berlin, to assist him in his monograph of the two genera; all of our *Zingiberaceæ* have been forwarded to H. N. Ridley, director of the

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Botanic Garden, Singapore, for study; while about 50 specimens of palms have been packed for shipment to Doctor Beccari, Florence, Italy. Our *Piperaceæ* are ready to be sent to C. DeCandolle, Geneva, Switzerland, who plans to prepare a monograph of the Philippine representatives of this difficult family.

COOPERATIVE WORK.

Cordial cooperation still holds with employees of the forestry bureau, the bureau of agriculture, and the bureau of education. Numerous identifications have been made for the forestry bureau, while various employees of the bureau of agriculture have come to recognize the necessity of the collection and accurate identification of plants of economic importance has been made for them. Doctor Copeland, of the Bureau of education, still continues his active work on fern-flora of the Philippines.

This laboratory is still in close relationship with various botanical institutions in America, Europe, India, China, Japan, and Australia, the exchanges previously arranged have been completed and new ones provided for, with the most beneficial effect upon the growth and value of our herbarium, which has become one of the largest in the Far East. While Mr. Merrill was in Europe he made the personal acquaintance of many of the leading systematists, not only of those who previously had made identifications for us, but also of those who have agreed to undertake work on the Philippine flora as soon as material can be supplied to them. Because of the work which is being accomplished here, and with the cooperation of many of the leading specialists of the world, rapid progress is being made in classifying the flora of the Philippines, so that even at this date the Philippine flora in many respects is better known than that of any other part of the Malayan region.

Manila more than ever has become the center of work on Philippine botany. When Doctor Robinson was appointed to the position of economic botanist in this bureau, the director of the New York botanical garden informed Mr. Merrill that his institution would do very little more on the Philippine flora, and consequently he has sent for determination to the bureau of science, through Doctor Robinson, all the unidentified material represented by duplicates in the Williams Philippine collection.

RECOMMENDATIONS.

The present crowded condition of the herbarium room is to well known to the authorities to require much mention, but additional space should be provided as soon as possible. With financial support equal to that of the past year the botanical work can be prosecuted with rapidity, but if possible provision should be made for the employment of an artist to make drawings of new or especially interesting Philippine plants, which should be issued with descriptive matter in the form of *Icones*, similar to *Icones Bogoriensis*, or Hooker's *Icones Plantarum*.

SECTION OF THE BIOLOGICAL LABORATORY FOR THE COLLECTION OF NATURAL-HISTORY SPECIMENS.

Since his return from Camiguin Island in July, 1907, Mr. Richard C. McGregor has been engaged on work in Manila. The greater part of his time has been devoted to the preparation of manuscript for a manual of Philippine birds, the first part of which is completed and the second and final section is under way. Nine papers on Philippine ornithology were published by him in the Philippine Journal of Science and four others have been written, but have not yet appeared in print. A start has been made on material for a bibliography of Philippine ornithology. A revised price and exchange list of bird skins has been printed.

Mr. Andres Celestino, the only assistant in this division, has made collections in northern Mindanao, in Sequijor, and in Bulacan Province, Luzon, securing 402 specimens of birds and a few insects, mollusks, and mammals.

Valuable additions to the bird collection have been made by exchange with the British Museum and the Menage Collection, and by gifts from the secretary of the interior, Mr. Alvin Seale, Chaplain Joseph Clemens, and Mr. William Edmonds. The number of bird specimens added during the year was 843, and the total number of birds in the collection is now 7,946.

More than during any previous year this section has been able to afford assistance to students who are not connected with the bureau of science.

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Large collections made by Chaplain Joseph Clemens in northern Mindanao were received on deposit and partly identified; they were finally removed by their owner. Dr. Edgar A. Mearns spent considerable time in the bureau identifying his collections from various parts of the archipelago, and was afforded every possible facility in the use of specimens and literature, as well as storage room for his collections, until he removed them on his return to the United States. While in Manila Doctor Mearns prepared two papers on birds, which were published in the Philippine Journal of Science. Two papers contributed to the Journal by the secretary of the interior were based in part upon material in the collection of this division. Dr. R. W. Shufeldt was furnished with osteological material for his paper on *Sarcops calvus*, which was printed in the Journal. Several small lots of skins were identified for Maj. John R. White, of Palawan.

THE CHEMICAL LABORATORY.

PUBLICATIONS AND INVESTIGATIONS.

It has been the endeavor to keep several members of the chemical staff continuously engaged on problems of economic importance to the Philippine Islands, and a more systematic division of the routine work of the division and increased facilities both in equipment and the number of workers has allowed us to do this. The past year has shown a decidedly greater advance in the important field of economic investigation than the previous ones.

Mr. Richmond, upon his return from leave, on November 1, began a systematic study of the so-called Manila copal or *almaciga*. Comparatively little is known of the Manila copal of commerce, except that it is undoubtedly of vegetable origin, and is collected in Malayan regions. Much confusion exists in the literature and in the trade regarding this important product. At the present time varnish manufacturers, who are the great consumers of this commodity, have to depend largely upon the different systems of grading practiced by oriental shippers, and they in turn must contend with the indiscriminating mixing of good, bad, and indifferent varieties, as practiced by native collectors.

Two natural orders of resin-producing trees, namely, the dipterocarps and conifers, are found widely distributed in Philippine forests. The product of the former is collected as a fresh exudation from the tree, while the resin from the latter is obtained in a semifossil state from beneath the surface of the ground, and constitutes the class of resin known and exported from the Philippines as Manila copal or *almaciga*. However, the greater portion of the Manila copal of commerce is finally shipped from Singapore, and is said to be derived from both dipterocarpous and coniferous trees, while the resin known commercially as dammar is believed to have a similar origin.

It is hoped that the work undertaken in this laboratory will aid in clearing up the confusion which at present exists in regard to the identity of these gums and in establishing a better system of commercial grading, thus promoting the exportation and intelligent utilization of these intrinsically valuable products.

The work on Philippine oils and their resources, undertaken by Mr. Richmond and Mariano Vivencio del Rosario, has continued throughout the year as time and material were available. The preliminary paper on this subject appeared in the Philippine Journal of Science for December, 1907. In this connection and in conjunction with the bureau of agriculture, the feeding value of certain oil cakes and seeds as ingredients in compounding native stock foods is being studied, and large amounts of analytical data on extracted copra cake, kapok-seed meal, and some hemp-seed meal have thus become available to the bureau of agriculture.

Doctor Bacon has continued his studies on several of the native resins, and two collecting trips were made during the year. "Brea," the soft resin of *Canarium luzonicum*, is known on the world's market as Manila "*elemi*." It contains 15 to 20 per cent of terpenes, which formed the basis of Doctor Clover's investigation mentioned in the last annual report, and which was published in the Philippine Journal of Science for 1907. These terpenes can be used for many of the same purposes to which ordinary turpentine is applied, but they are also of such a character as to offer great possibilities in the manufacture of more valuable products, such as perfumes and drugs. Their application in this direction is being studied by Doctor Bacon, and his initial paper on the subject appeared in the Philippine Journal of Science for April, 1908. The residue, after distilling the terpenes, is a brilliant, light-colored resin which should prove valuable in the manufacture of varnishes. The quantity of "brea" avail-

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able in the Philippines is such that if valuable uses can be found for it, it will be one of the principal secondary products from the forests.

Rather extended studies have been made of ilang-ilang oil by Doctor Bacon, and a method of analysis has been developed, so that the quality of an oil may now be determined from the safe basis of chemical and physical analysis rather than from the more uncertain judgment of smell. For the first time, the methods of manufacture of this oil have been published, and better methods of distillation and of handling the flowers have been indicated.

Several other essential oil-bearing plants have been examined. The common grass root called in Tagalog "moras" (*Andropogon* sp.), has been distilled and a 1 per cent yield of vetiver oil obtained. Another *Andropogon* species which has been studied is the common lemon grass (probably *Andropogon citratus* DC.). The plant grows well in most parts of the islands, and between 0.2 and 0.3 per cent of a good grade of oil has been distilled from Philippine material. Plots of grass from different sources were planted in the Singalong experiment station, and the grass from measured pieces of land is now being harvested and distilled, so that figures on the yield of oil per hectare in the Philippines will be soon available. While it can not as yet be stated whether great profits may be expected from the industry, still it is certain that lemon grass would prove attractive enough to be used as a catch crop for cocoanuts or hemp, to which it lends itself well because of the quick returns and small capital necessary for its utilization.

The fruit of *Pittosporum resiniferum*, commonly known as petroleum nut, was found to yield 3 per cent heptane, a very valuable oil for cleaning delicate fabrics, and 7 per cent of pinene, the oil employed in the manufacture of artificial camphor. Boneol, a near relative of camphor, has been isolated from *Blumea balsamica*, and fragrant oils have been distilled from the leaves of *Lantanna* and from the bark of *Cinnamonum mercadoi*. Other tropical perfume plants are being studied.

Work has been carried on during the year, in conjunction with Mr. Gaña, on the mangrove barks, with the idea of utilizing the immense supply of these substances in the leather industry. Results thus far obtained show that the Philippine barks average from 17 per cent of tannin for those collected in Mindoro to 24 per cent for those from Mindanao. United States forestry statistics show that mangrove tan barks, and more particularly their extracts, are coming into general use, in competition with oak and hemlock barks for tanning purposes. With free entry into the United States of tanning extracts manufactured from Philippine mangrove barks, the outlook for a new industry is very promising.

Studies on the starch and alcohol production from a number of Philippine plants have shown that several of them promise to be of considerable economic importance. The cassava plant yields 25 to 26 per cent of fermentable matter. Other starch-producing plants which show value are *Tacca pinnatifida*, which yields 22 per cent of high-grade starch known commonly as Bermuda arrowroot. The common arrowroot, which yields the highest priced of all starches, grows wild in the Philippines and gives 18 to 20 per cent of the commercial article.

Some of the arrow poisons used by the wild tribes have been described during the year.

ROUTINE WORK OF THE CHEMICAL LABORATORY.

An analysis of the routine work accomplished by the chemical laboratory during the year further emphasizes the fact mentioned in the last annual report, namely, an increased appreciation and use of cheimcal analytical work by the commercial interests of the islands. Requests for analyses of gums, resins, soils, waters, fertilizers, foodstuffs, oils, rocks, and minerals are constantly being made. The public is also frequently applying to the laboratory for consultation and the use of recorded analytical data for the commercial valuation of products in which merchants are interested. The collections which we have made are also frequently studied by persons not connected with the bureau. Even merchants and prospectors from adjacent countries have recognized our facilities for rapid and efficient service, and have submitted materials for analysis and asked our opinion as to values, rather than to employ the commercial laboratories of Europe and America. An assay of 48 samples of copra and copra cake made in this year for local dealers illustrates the growing tendency on the part of commercial firms to take advantage of the facilities offered by a well-equipped analytical laboratory in this part of the world.

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OPIUMS.

Since the passing of Act No. 1761, "Opium law," 51 samples of pharmaceutical or proprietary preparations were examined for the presence of opium or its alkaloids. Eighteen positive and 13 negative reports were rendered.

MILKS.

During the year 270 carabaos' milks were analyzed for the bureau of health. Carabao milk is the one principally used for public consumption and is perhaps one of the chief factors of the high infant mortality in the Philippine Islands. The samples were collected on the open market by medical inspectors and brought directly to the laboratory for chemical and bacteriological examination. The fat content of these milks was found to vary from 3 to 20 per cent, whereas the percentage of fat in normal carabao milk averages 10.60, thus showing the general practice of watering the milk or its alteraton in composition by other means before it reaches the hands of the consumer. Under the present conditions it would be absolutely necessary to have a chemical analysis of each individual milk before an intelligent attempt at modification to meet the demands of infant feeding could be made. Aside from the great variation in composition which we encountered, the usual average composition of normal carabao milk is such as to render it impossible to use it as an infant food. One-half of the total solids of normal carabao milk consists of fat and one-third of proteid, a composition which does not admit of proper modification.

It is strongly recommended that further effort be made toward correcting the present conditions in this respect. The well-known satisfactory nature of goats' milk would seem to warrant a systematic undertaking looking to its general use in the islands.

WATERS.

Work on Philippine waters has occupied nearly all of the time of one chemist throughout the year. The survey is nearly completed, and when published will furnish valuable information on Philippine surface and well waters from many localities, both from the standpoint of their potability and their use for steaming purposes.

Water analysis is tedious and painstaking work, and bare mention of the total number of different waters analyzed does not indicate the time consumed. Seventy-two waters, representing 33 localities and 11 provinces of the archipelago, were examined during the year. The artesian-well waters were most thoroughly investigated. Frequently two or more examinations of the same water were made at different periods. These waters were tested from the standpoint both of their sanitary and technical uses.

With very few exceptions, these artesian wells apparently furnish a much better source for drinking and domestic purposes than the surface or shallow well waters previously employed therefor, and their introduction is unquestionably a great sanitary measure. Philippine waters as a class are medium to hard. Of 28 artesian-well waters examined for steaming purposes, 16 were considered satisfactory and the remaining 12 unsuitable, unless previously treated to reduce their hardness. The chief characteristics of these waters are their relatively high silica content among the scale-forming ingredients, and the temporary nature of the total hardness; hence they are rendered comparatively soft by the use of feed-water heaters. Calcium sulphate, which is the source of so much trouble in waters for locomotive use elsewhere, has not been encountered to any extent in Philippine ground water. A total of 8 mineral waters representing that number of thermal and nonthermal springs were also analyzed. The great variation in the composition of these does not admit of any conclusions regarding Philippine mineral waters as a class.

CEMENT.

The routine work of the cement-testing laboratory shows the greatest increase in volume of any class of analytical work. Over 1,200 samples, representing the different brands of cement found on the local market, were received and tested within the last six months. Variations in soundness and tensile strength of certain cements were encountered early in the work, and this variation led Mr. Reibling, who has conducted all of the tests, to begin a systematic investigation looking to the causes underlying these irregularities. The results

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thus far obtained will prove of great value to engineers who have encountered difficulties in the use of local cements in concrete construction in the Philippines. Mr. Reibling's paper on this subject is now in press and further work in this direction is in progress.

THE SECTION OF WEIGHTS, MEASURES, AND MINERAL ANALYSIS OF THE CHEMICAL LABORATORY.

Act No. 1519, known as the "weights and measures act," has been partly in operation for over a year. A number of the provinces were supplied with sets of standards during the last fiscal year, but not all which had been ordered arrived with the first shipment, so that the work of standardization in the provinces may be said to have only begun. However, all of the secondary provincial standards have passed this bureau and have very recently been distributed. The following indicates the work done:

Secondary standards for the provinces:

Weights	450
Measures of length	427
Measures of capacity	270

Many municipalities have now expressed a desire also to own their own standards, and consequently the purchasing agent has been directed to order for this purpose 160 sets of third-class weights from 10 kilograms to 1 gram and including fractional weights; the same number of measures of capacity; meter measures of length, and linear measures equal to one side of the cubic dimensions of certain measures of capacity. During the year this bureau has itself been obliged to manufacture several weights, measures, and instruments.

In addition to its work in standardization, this laboratory has also done a comparatively large amount of other paid routine work. In 1906 the price of gold assays was established at ₱2 Philippine currency each, which is extremely low for scattered work. This step was unquestionably an encouragement to the miners, for our statistics showed 621 assays in 1907 as against 233 for the previous year. The work has still further increased during the present fiscal year, in spite of the fact that several small assay plants have been brought to the Philippines and are in use by mines operating at a capacity which is so great as to render it no longer possible to send the samples to Manila. The number of assays for gold, silver, or platinum during 1908 were 772; copper, 245; lead, 10; zinc, 3; iron, manganese, nickel, tellurium, etc., 12. The list of gold and copper assays was somewhat augmented by the thorough investigation of certain large fields. Twenty minerals were analyzed, in which over 100 constituents were quantitatively determined. The proximate analyses of a number of coal samples has also been made and the calorific values of these also determined. A few steaming tests have been undertaken for pay. Nearly 200 ounces of bullion passed through our furnaces. These figures do not include the work done for the division of mines and for other bureaus of the government or for the purpose of research.

RESEARCH.

The larger part of the work had to do with technologic or so-called "practical" questions—that is, with coal, cement, and clays, for there is a very pressing demand for the exploitation of the country's natural resources in these materials. Coal, cement rock, and clays, as well as gold, silver, and copper, have aroused the interest of many in the Philippines. Doctor Cox has continued his investigations of the coals of the Philippines, giving especial attention to their practical utilization.

Coal.—Two articles on coal have appeared in the Philippine Journal of Science during the year, and a third, which gives a short summary of the information at hand at the time of writing, has appeared in the "Report on the mineral resources of the Philippines," prepared by the division of mines. Another paper, showing the economy and efficiency of the coals of the Philippine Islands as compared with the foreign coals offered on the market in this archipelago when burned under a boiler, will soon be printed in the Philippine Journal of Science.

There is an unfounded prejudice against Philippine coal, which, however, is gradually disappearing in the face of its utilization by various interests. Perhaps it is not generally known that 25,000 tons were mined in Cebu during

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Spanish times and used very successfully on the steamers of the commercial companies and the Spanish navy. There is no doubt that Philippine coal will be employed largely as a fuel for steaming purposes, but it is still an open question how the supply can be most economically used. The deeper beds may prove to be exceptionally valuable as a steam-producing fuel, but in developing, opening up, and working the mines now known there is a large amount of outcrop coal and slack that is unsuited for steaming purposes and which for the sake of economy should be used.

In March of this year Doctor Cox made a steaming test under regular operating conditions at this bureau of coal from the military reservation, Batan Island, in which over 18 per cent of the fuel value of the coal passed through the grate and was lost to the test. This sample showed an evaporation of water from and at 100° C. of only 4.32; this figure would have been 5.27 had the combustible actually been consumed. Many Philippine coals are very fragile, and even when they have been sacked with care arrive at our boilers containing a fair amount of fine coal. When they are used in a steam plant they decrepitate and produce more fine coal, which falls through the grate, this loss causing a low evaporation. In May of this year another steaming test of a carefully selected and carefully sacked cargo of coal from the same source as above was undertaken, and even in this case over 10 per cent of the fuel value passed through the grate and was lost to the test. This sample showed an evaporation of water from and at 100° C. of 6.54, which would have been 7.30 had the combustible actually been consumed. Attention should also be called to the fact that Philippine coals as a class give high temperatures in the stack, and their use under a steam boiler does not appear to be the most economical means for their consumption.

In connection with the study of the utilization of Philippine coal the question of increased power for this bureau has also commanded attention. In order to supply the new hospital and medical school additional power must be installed, for when both our present engines run steadily for twenty-four hours a third must be provided, to enable us to make the necessary repairs on the idle one. At present we have a battery of two boilers so arranged that while one is in use the other is being cleaned and repaired. The builder's rating for each is 74 horsepower, but we are operating them at an average of 112 per cent of the builder's rating. With the present equipment it is evident that both engines and boilers will have to be used at the same time when the new institutions are built.

In enlarging our power plant we desire to do it in a way that will be satisfactory, and at the same time give information of value to the Philippine Islands. Recent experiments carried on by the Untied States Geological Survey at St. Louis with a producer gas plant have given unusually promising results. It was at first thought impossible to use poor coals in a gas producer to develop gas for a gas engine, but even lignites worked well, and the gas had as high a calorific value as that from any other coal which was used.

Coal to be used under a boiler must have a certain calorific value, for in that location, in a definite space, it must be burned to gas, the gas burning to make a sufficient quantity of steam and the steam used for moving the pistons in the cylinders. In a gas-producer plant the quantity or quality of the initial coal is of little consequence, so long as it produces gas of a good quality. The gas is conducted directly into the cylinder and exploded there in order to move the engine. This dispenses with the intervening steam, and at this point the great advantage claimed for the producer gas plant is gained. If we can successfully use low-grade coals in the Philippines we have scored a valuable point.

Mr. A. J. Holmes, one of the committee in charge of the coal-testing plant in St. Louis in 1904, says: "We were careful in any of this work, where we would get the boiler test, to find out how many pounds of coal were necessary to develop a horsepower per hour; and found that when we put that same coal through the gas producer it would require generally less than half the amount of coal in pounds to develop a horsepower that it required in the steam boiler. We worked through a series of averages, using nearly 150 tests made in that way, and comparing the results obtained from the same coals in the gas producer and under the boiler, and got on an average about 2.6 times as much power from every ton of coal in the gas producer as we did under the boiler."

Nearly all of the work of the United States Geological Survey has been from the standpoint of efficiencies, and data regarding first cost and cost of operation are difficult to obtain on this side of the water. A series of articles by J. H. Alexander has been printed in The Engineer, with some data relative to the cost

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and operation of steam and gas power plants. In determining the first costs of the two plants the writer had access to the controlling companies' books and the costs given are actual and are per kilowatt, as follows:

Plant.	Steam plant.	Gas plant.
Buildings and foundations	$25.93	$60.34
Boilers	23.65	40.83
Engines	15.02	43.33
Generators	14.98	20.00
Switchboards	5.25	2.33
Auxiliaries	5.95	.....
Piping	17.95	9.30
Total	108.73	176.13

He says: "It would seem from the figures that producers are comparatively high priced, but this is not the case. The producer installation is of twice the capacity required in order to provide for future enlargements, while the boiler capacity is just that required for the engine horsepower in the steam plant. The great difference in the cost per kilowatt of these two buildings can not be attributed to the type of plant. It is, however, due to the construction and size of the buildings themselves. The one occupied by the gas plant is extremely large; the one occupied by the steam plant is exceedingly small." After giving other figures he says: "These figures show conclusively that in this instance the producer is by far the cheaper unit."

The first cost of a gas plant of 200-horsepower capacity is given as follows:

Buildings and foundations	$3,620
Boilers	2,450
Engines	2,600
Generators	1,200
Switchboards	140
Auxiliaries and piping	558
Total	10,568

The following table shows cost of operation per kilowatt:

Item.	Steam plant.	Gas plant.
Fuel	$0.01880	$0.00770
Water	.00059	.00002
Labor	.00462	.00817
Supplies	.00055	.00070
Total	.02456	.01659

With the gas plant working at full capacity (in the above the 200-horsepower gas plant was operated at only 80 horsepower) the cost of operation would be very much reduced, so that it would be even still cheaper than for the steam plant. The difference is so great that it would not require long to counterbalance a much greater first cost.

The Engineering Magazine (1908), 34, 906, says: "The gas-producer and the gas engine plant is more economical than steam power where coal costs more than $3 per ton."

It may be possible that a producer gas plant can be so constructed that it will alternately manufacture producer gas and water gas for the laboratory, the hospital, and the medical school, thereby doing away with our present expensive and unsatisfactory system and obviating the expense of any further addition. Doctor Cox, at equal or even greater cost than a steam plant, recommends the producer system for the development of the future power at the laboratory. If we can demonstrate that this is by far the most economical method for the consumption of the fuel of this archipelago, where a plant does

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not also need steam for drying and heating purposes, the excess cost of installation is fully justified. It would induce similar power plants to install like systems, a market would be created for the low-grade Philippine coal and this would solve the problem of power for large manufacturing establishments.

Since this method for the utilization of fuels is so new and has developed and is developing so rapidly, and since reliable data regarding the successful operations, costs, etc., are so difficult to obtain, it has finally been deemed best to secure our information first hand by a canvass of the work being done on a commercial basis by commercial people in the United States at the present time.

Clay.—The work on Philippine clay, begun last year, has been carried on as opportunity afforded. In December, 1907, the first article on the occurrence, composition, and radio-activity of the clays from Luzon was published in the Philippine Journal of Science. This article was intended only to furnish preliminary information with respect to the possible use of these materials in the manufacture of a good grade of pottery, but some of the data there given have been useful to those interested in the search for cement materials. In May of this year Doctor Cox was able to visit Laguna Province to investigate the clay deposits there. The results of experimentation with the samples collected in this region will eventually be published in the Philippine Journal of Science.

Cement.—Considerable effort has been expended in the attempt to produce cement from Philippine materials, but as yet we have been unable to obtain a sufficiently high temperature to burn quantities large enough for experimentation. This work will be continued during the coming year after we have constructed a small rotary kiln.

Cocoanut.—Mr. Walker has pursued the study of the cocoanut and the causes of rancidity and the prevention of deterioration in cocoanut oil. This work was begun in 1906, and since then he has paid special attention to the oxidation of commercial oils by air. He has studied the changes in composition taking place in the cocoanut while sprouting, and has tried to discover if the cocoanut contains fat splitting enzymes which will hydrolyze fat outside of the growiug nut. An investigation of the action of certain bacteria and molds on copra in pure culture was also made (with Doctor Edwards). This work is foreign to that of mineral analysis, but as it was begun before it became necessary to transfer Mr. Walker to his present work it was advisable for him to continue as opportunity afforded.

Sugar.—Mr. Walker will be ready to leave for Negros before many weeks to carry on there the investigation of sugar and sugar cane, which has been under consideration for a long time. He could not go sooner because of the press of work in Manila.

Publications.—The publications of the chemical laboratory in the Philippine Journal of Science have been as follows: "Commercial Utilization of Some Philippine Oil-Bearing Seeds: Preliminary Paper," by George F. Richmond and Mariano Vivencio del Rosario; "Philippine Terpenes and Essential Oils, I," by Raymond F. Bacon; "Philippine Terpenes and Essential Oils, II—Ylang-Ylang Oil," by Raymond F. Bacon; "The Composition of Horlick's Malted Milk," by George F. Richmond and W. E. Musgrave; "The Occurrence, Composition, and Radio-Activity of the Clays from Luzon, Philippine Islands," by Alvin J. Cox; "Starch Production in the Philippine Islands" (editorial), by Raymond F. Bacon; "The Relationship Between the External Appearance and the Ash Content of Philippine Coal" (editorial), by Alvin J. Cox; "Philippine Arrow Poisons" (editorial), by Raymond F. Bacon; "The Purification of Cocoanut Oil," by George F. Richmond.

THE LABORATORY FOR FOOD AND DRUGS INSPECTION.

Mr. H. D. Gibbs, in charge of the work on foods and drugs, makes the following report:

"The United States food and drugs act, June 30, 1906, in its intention applies to the Philippine Islands, as is evidenced by section 12, which states that 'the term "Territory" as used in this act shall include the insular possessions of the United States,' and section 10, which mentions 'the District of Columbia or the Territories, or insular possessions of the United States.' For the purpose of simplifying the enforcement of the law by the officials of the government and the courts of the Philippine Islands, the

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Philippine Commission on May 18, 1907,. passed an act which is identical with that of the Federal Government in all essential points excepting in the designation of the officials in whom the enforcement of the law rests. The most important differences are:

"FEDERAL ACT.	"PHILIPPINE ACT.
"SEC. 3. That the Secretary of the Treasury, the Secretary of Agriculture, and the Secretary of Commerce and Labor shall make uniform rules and regulations for carrying out the provisions of this act, including the collection and specimens of food and drugs.	"SEC. 3. The insular collector of customs, the director of health, and the collector of internal revenue shall make uniform rules and regulations, subject to the approval of the secretary of the interior of the Philippine Islands, for carrying out the provisions of this act. * * *
"SEC. 4. That the examination of specimens of foods and drugs shall be made in the Bureau of Chemistry of the Department of Agriculture, or under the direction and supervision of such bureau, for the purpose of determining from such examinations whether such articles are adulterated or misbranded within the meaning of this act. * * *	"SEC. 4. The examinations of specimens of foods and drugs shall be made in the bureau of science, or under the direction and supervision of that bureau. * * *
"SEC. 5. That it shall be the duty of each district attorney to whom the Secretary of Agriculture shall report any violation of this act, * * * to cause appropriate proceedings to be commenced and prosecuted in the proper courts of the United States. * * *	"SEC. 5. It shall be the duty of the attorney-general of the Philippine Islands, to whom the secretary of the interior of the Philippine Islands shall report any violation of this act, * * * to cause appropriate proceedings to be commenced and prosecuted in the proper courts of the Philippine Islands.
"SEC. 10. * * * The proceedings of such libel cases shall conform, as near as may be, to the proceedings in admiralty, except that either party may demand trial by jury of any issue of fact joined in any such case. * * *	"SEC. 10. * * * The proceedings hereinbefore mentioned shall conform as near as may be to the proceedings in admiralty in the courts of first instance of the Philippine Islands.[a] * * *
"SEC. 11. The Secretary of the Treasury shall deliver to the Secretary of Agriculture, upon his request from time to time, samples of foods and drugs which are being imported into the United States. * * *	"SEC. 11. The insular collector of customs shall deliver to the director of health, upon his request from time to time, samples of foods and drugs which are being imported into the Philippine Islands. * * *

"The work of actively enforcing the 'food and drugs act of May 18, 1907,' began in the month of August, 1907, by the inspection of foods and drugs passing through the custom-house of the port of Manila. Later, the collection of samples was extended to other ports of entry of the Philippine Islands and to articles on sale in the local markets. The main part of the work has been upon the samples passing through the Manila custom-house. These importations are principally from the United States, Spain, Germany, France, Italy, Switzerland, Great Britain, China, Japan, and Australia, and are most varied in character and composition. The small laboratory force engaged in the food and drug work, while almost entirely occupied with these importations, has also begun the examination of native products. It is hoped that this work can be extended more rapidly in the near future, for many of these foods and drugs promise an interesting field for investigation.

"The food and drugs inspection from the beginning of the enforcement of the law to June 30, 1908, has consisted in the examination of 622 samples of foods and 99 of drugs. These are classified and arranged in tables to show their origin and adulteration. A large number of samples have been found to be misbranded, and in every case the importer has been allowed the option of

[a] There are no trials by jury in the courts of the Philippine Islands.

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relabeling in the custom-house under government supervision or reexporting the shipment. The majority of the cases of misbranding are not mentioned in the following tables." [a]

Summary of the samples examined.

Sample.	Number of samples.	Illegal.
Animal products.		
Bacon	15	2
Ham	38	12
Caviar	7	2
Lobster	3	1
Sardines	12	.....
Fish in tins (miscellaneous)	18	2
Sausages	39	11
Meats (miscellaneous)	59	1
Lard	11	5
Sterilized milk	16	6
Condensed milk	15	8
Sweetened condensed milk	1	.....
Condensed skim milk	2	1
Evaporated cream	9	7
Butter	51	33
Imitation butter	6	2
Cheese	43	21
Vegetable products.		
Bean flour	1	.....
Vermicelli	1	1
Infant's food	1	1
Canned fruits	23	1
Preserves	10	.....
Camote	1	20
Canned vegetables	77	20
Vegetable products (miscellaneous)	22	5
Sugar and related substances	12	2
Condiments	15	2
Flavoring extracts	19	11
Edible oils	5	.....
Cocoanut oil	3	.....
Chocolate	2	.....
Beverages	64	53
Vinegar	3	.....
Artificial colors	13	12
United States pharmacopœial preparations	12	8
Proprietary medicines	87	76
Total	721	305

A number of problems requiring a more or less extended research investigation have arisen in addition to the analytical work tabulated above.

One of these is the formation during transit of salicylic acid from its esters which have been used in the preparation of various medicines and beverages. One phase of this work has already been described in the Philippine Journal of Science and others are still under investigation.

Another problem of interest to the islands is the effect which copra cake fed to hogs has upon the fat of the animal. It is well known that cotton-seed cake has an effect which is manifested in lards made from hogs fed with that material. Feeding experiments are now being conducted on hogs, and the analytical work upon the fats will shortly be taken up. Other studies are being carried on upon cocoanut oil.

Formaldehyde was found to be a constituent of a number of food products shipped to the Tropics, and is being studied in respect to some of its reactions and chemical behavior. Codein, occurring in many proprietary medicines, has shown some peculiarities in its behavior which appear worthy of investigation. The effect of tropical sunlight upon some chemical reactions is also being studied.

It is hoped that some of the investigations at present in progress will be completed within the next year.

[a] Detailed tables showing the samples examined in detail have been omitted and filed in the Bureau of Insular Affairs, War Department.

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THE DIVISION OF MINES.

STAFF.

At the beginning of this fiscal year the division of mines had the following authorized positions: One geologist, who acted as chief of the division, and who was in charge of the section of geology and paleontology; 1 mining engineer, who was in charge of the section of mineral resources; 1 mining engineer, who was in charge of surveying and maps; 1 geologist, who was in charge of the section of petrography and ore deposits; 1 assistant geologist; 2 topographic assistants; 1 draftsman; and 1 employee who was also engaged in the making of petrographic slides. There existed at this time three vacancies in the division; one in that of the assistant geologist whose field was to comprise particularly the subject of nonmetallic minerals, and two in those of topographic assistants. One of these latter positions was filled on September 1, 1907, and Dr. George I. Adams, who has satisfied all the requirements of the civil service, and who, to judge from his record, appears to be well qualified for the position, has accepted the appointment of assistant geologist and is now en route to the islands.

During the past year the division suffered a great loss in the deaths of two of the most faithful members of the former bureau of mines and afterwards of the division. Hugo Navarro had been a draftsman in the government service for about twenty-eight years, having served successively in the Spanish inspección-general de minas, in the old mining bureau, and in the present division of mines. On November 2, 1907, after a very brief illness he died, and the division lost the services of a most faithful and reliable man. At the time of his death all the members of the division of mines were in the field, and so it was deemed best to postpone the appointment of a draftsman to fill the vacancy until the return of some of the men. This was done four months later, March 2, 1908, and the present incumbent of the position, who happens to have been a pupil of Hugo Navarro, has filled the place satisfactorily since then.

The second and more recent misfortune which has befallen this division, and which has so shocked not only the members of the division and the bureau, but the public in general, was the cruel and treacherous murder of our colleague, Harry M. Ickis. The details of this sad affair which we have been able to obtain make it appear that Mr. Ickis was slain in the mountains, about two days' journey east of Malaybalay, in the subprovince of Bukidnon, while he was engaged in a geological reconnoissance of that portion of Agusan Province. As far as we have been able to learn, the general cause of this atrocious act was the ignorance of the Manobos, supplemented probably by a desire for revenge of supposed wrongs inflicted during the Spanish régime. Lest it be said that Mr. Ickis took unnecessary risks in venturing into this country, it is well to state that he was not the man to display an unseemly bravado; that while admirably fearless, he was not reckless, and took no chances he did not believe were necessary. From a knowledge of the inhabitants of the region that he had gained on a previous trip into their country, he had reason to believe that, as he expressed it in an official report, "the inhabitants of the interior are harmless and peaceable. * * * Travel and prospecting can be carried on without molestation." Furthermore, it was arranged with the governor of Agusan Province before Mr. Ickis and Mr. Goodman separated that the governor, with a small constabulary guard, would accompany Mr. Ickis on the trip from Talacogan to Malaybalay. While Mr. Ickis expected to suffer hardships and privations during his travel through this very sparsely inhabited territory, it is evident that he had no reason to expect any real physical danger. The journey was actually begun as planned, but it appears that the governor of Agusan received an urgent summons which compelled him to return. Mr. Ickis and one constabulary private continued the trip and both were killed. The following are the words of Mr. Goodman, acting chief of the division of mines: "While I realize that a eulogy of Mr. Ickis may be considered out of place in a report of this nature, I can not refrain from stating that the division of mines has lost a most loyal and conscientious worker, one who, because of his ability, integrity, and character, had won the admiration and confidence of the entire mining fraternity in the Philippine Islands, and one whom it will be difficult to replace."

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FIELD WORK ACCOMPLISHED.

The field work done by the members of the division of mines during the past fiscal year may be summarized as follows: The completion of a geological reconnoissance of the Batanes group, by Mr. Ferguson, about one month; a triangulation survey of the Aroroy mining district in Masbate, by Messrs. Goodman and Ickis, about two months; a brief trip to Cebu for the purpose of collecting supplementary data for his paper on the Compostela-Danao coal fields, by Mr. Smith, about two weeks; an underground survey of "The big copper" in Lepanto, by Mr. Goodman, about one and one-half months; a topographic survey and a geologic reconnoissance of the Aroroy mining district in Masbate, by Messrs. Ferguson and Clark, about four and one-half months; a geologic reconnoissance of portions of Mindanao, by Messrs. Smith (four months), Ickis (six and one-half months), Clark (one month), and Goodman (four months). This reconnoissance was made up of a number of expeditions by different members of the division, traveling either singly or in pairs, to various reported outcrops of mineral deposits and over hitherto but little known portions of the island of Mindanao, for the purpose of mapping and collecting geologic data. As a result our knowledge of the physiography of Mindanao has been considerably increased and several route maps of the interior of the island have been made for the first time, as, for instance, from Cagayan de Misamis to Sevilla; from the Mindanao River to the Gulf of Davao; from the Gulf of Davao to Mati; and from the Gulf of Davao to Surigao. Furthermore, several mineral prospects have been investigated. Among these are the coal deposits of Sibugay, of Tarragona, and of San Jose de Bislig. The placer deposits of the Pulangui, of the Tumaga, and of the Cousuran rivers, as well as the quartz veins near the town of Placer, were examined. Some of these maps and reports have already been published, while others are now in the course of preparation.

ARTICLES PREPARED FOR PUBLICATION.

The following papers on geological or mining subjects by members of this division have appeared in various publications during the last fiscal year or have practically been completed in manuscript form.

"A Description of the Geology and Mining Operations in the Camarines Gold Fields," by H. M. Ickis; "Notes on the Geology and Geography of the Baguio Mineral District" (with map), by A. J. Eveland; "The Petography of Some Rocks from Benguet Province," by W. D. Smith; "The Gold Placers of Nueva Ecija," by Maurice Goodman; "The Sulphur Deposits of Leyte," by Maurice Goodman; "The Sulphur Deposits of Camiguin Island," by H. G. Ferguson; "A Geological Reconnoissance of the Batanes Islands," by H. G. Ferguson; "The Stone Quarry of Mariveles," by H. M. Ickis; "Notes on the Manila Lime Supply," by Maurice Goodman; "Contributions to the Physiography of the Philippine Islands: Batanes Islands," by H. G. Ferguson; "The Geology of the Compostela-Danao Coal Fields," by W. D. Smith (with map); "Note on the Occurrence of Rhyolite in Cebu," by H. G. Ferguson.

THE ANNUAL BULLETIN.

The first annual bulletin of the mineral resources of the Philippine Islands, the collection of data terminating on January 1, 1908, and issued by W. D. Smith, appeared during the year. This publication, in addition to the mineral statistics for the year 1907–8 compiled by Mr. Smith, also contains the following contributions: "The Nonmetallic Minerals," by W. D. Smith; "The Metallic Mineral Resources," by Maurice Goodman; "Mining and Geologic Notes on a Portion of Northwestern Mindanao" (with map), by H. M. Ickis; "Mining Prospects on and Near the Zamboanga Peninsula," by W. D. Smith; "Summary of the Chief Characteristics of the Philippine Ores," by W. D. Smith; and "A Summary of the Chief Characteristics of Philippine Coals," by A. J. Cox, of the chemical division.

FUTURE WORK.

The future work contemplated by this division comprises:

The preparation of a base map of the Mambulao and Paracale gold fields in Ambos Camarines, together with the geologic reconnoissance of the district; a preliminary geologic reconnoissance of the coal deposits of southern Mindoro; on exploratory reconnoissance for the purpose of investigating the iron-ore bear-

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ing district between Bosoboso and Angat; an exploratory reconnoissance of the Cagayan River Valley in northern Luzon, with particular reference to known coal and gold deposits; an investigation of the earthy minerals with the view of locating practicable sites for cement manufacturing, ceramic and other allied industries; and the collection and publication of data and statistics referring to the mineral resources and the mining and milling conditions of the islands in general.

It is very gratifying to be able to report that during last year the mining industry in the islands has taken a new impetus, and from all signs this new development appears to be a healthy and honest growth. The industry is still small, but it is believed it will increase more rapidly now that it has obtained a fair start. Nothing promotes the mining industry in a district so much as successful operations.

During the past year this division made the first attempt systematically to collect statistics regarding the mineral output. While the results as a whole are not such as can be pointed to with any great amount of pride, it must be remembered that the industry here is still in its infancy and that the work now being done is more in the way of development than of mining proper. While it may not be safe to prophesy on the future of so young an industry, it is safe to predict that the output from the gold mines, and perhaps also the coal mines, will be more than doubled or even trebled during the coming year. The annual bulletin of the mineral resources of the Philippine Islands next year will show a decided advance over this. We were compelled to make a beginning at some time, and perhaps it is just as well to start in a small way and advance, than it is to go in the reverse direction.

RECOMMENDATIONS.

It is only proper that the division of mines should grow in importance with the increase of the business which it is created to foster. To this end the facilities of the division should be increased. With the advance of development, more particularly of coal mines, a system of inspection of timbering, ventilation, safety devices, etc., will need to be inaugurated. In carrying out such inspections the system of course would be so planned as to be a help to the owners of the properties as well as in securing additional security to the miners. The present force of the division of mines is inadequate to carry out inspections.

Recently the bureau adopted the policy of making free assays and analyses on such samples as were authentic and promising, coming from prospectors in new districts and accompanied by ample information so as to render them of value in our work. We can expect a still greater increase in our geological and mineralogical collections from this source. In the past, for lack of space, we have been accustomed to distribute our duplicates to school teachers and to others to whom they might be of value or interest, but with the new influx of material we are rapidly becoming overstocked, and have to pack away collections and specimens, some of which it would be advisable to retain in a permanent museum.

The subject of increased and suitable museum space, and the need of a better disposition of the offices and working rooms of the division, has been discussed ever since the inception of the division of mines. With the present crowded condition of the laboratory building, but little improvement can be effected in this respect.

One considerable improvement in the present facilities is also necessary so that a practical, working test can be made upon 3 to 5 ton samples of ores. At the present time prospectors must send such samples to the United States or to foreign countries, in order to obtain the desired tests and reports. By the purchase of a small amount of machinery (principally a small stamp mill) and the construction of another outbuilding, such analyses could be made in the laboratory at a great saving of time and money to the miner. The installation of such machinery, with the facilities already at hand, would so encourage the demands for ore tests, that the fees charged therefor should in a short time, to a large extent, repay the bureau for the original cost.

Another step which might be taken in the interests of the gold miners of these islands would be the establishment of a system whereby the government of the Philippine Islands would become the purchaser of all the bullion product of the mines or by the putting in of facilities, probably in the same building as the stamp mill and cyaniding plant, to smelt and refine large quantities of gold to be cast in the standard bricks to be purchased by the

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banks. At the present time the banks act merely as intermediaries between the miners and smelters, advancing an approximate value on the bullion, and they must charge a certain amount of interest for this advance, besides commissions, freight, and insurance. They pay in full for the bullion received only after the returns are obtained from the smelters in the United States. If this bullion were bought by the government, it would merely be necessary for the miner to bring his gold to the laboratory to be assayed, smelted, and cast into bars, and to receive therefor a certificate giving its valuation. This certificate should then be honored at the treasury of the Philippine Islands, which would become the depository of all bullion. If found necessary, the treasurer could set a certain standard of fineness of all gold which he would purchase, and all bullion falling below this standard could be refined in the laboratory and the cost thereof deducted from the value of the bar. This system is in line with the policy carried out by other governments, would put the government itself to no or but very little expense, would tend to increase the amount of currency in circulation, and would assure the miner correct, prompt, and slightly larger returns for his bullion. If it were not deemed advisable for the government to do this business, the bars, if properly stamped with the laboratory mark, would readily be taken by the banks at a good valuation for disposition in other countries. The inauguration of this system would put the government to some expense for furnaces, balances, safes, and other appliances necessary to give us a complete plant, but this could be entirely covered by a slight charge for smelting.

The mining laws of the Philippine Islands stand to-day much as they did in 1902. The crying need of the repeal of section 33 and the amendments of sections 36, 56, and 75 of the law of Congress of July 1, 1902, is felt to the same degree to-day as it has been in the past, when Mr. McCaskey so vehemently and persistently urged these changes at every favorable opportunity. Considerable benefit resulted from his efforts; in fact the bill embodying the necessary changes was actually introduced in Congress by Senator Lodge, and advanced to a second reading. However, no vote was ever taken, and so far as we know it still rests with the Committee on the Philippines, to which it was referred. It seems that further agitation and appeal to the Congress of the United States might be prosecuted with benefit to the mining industry of the Philippines.

THE DIVISION OF ETHNOLOGY.

In August, 1907, the property of the division, including office furniture and museum material, was moved from the bureau of education building to the museum building, on Calle Anloague, formerly occupied by the bureau of architecture.

Mr. Christie, who was in charge of the division in the absence of Doctor Miller, immediately began installing the museum specimens in the south and middle rooms. The north room had not at that time been fitted up. Mr. Christie carried along so effectively the work of the museum that with the exception of the labeling the preliminary installation was practically completed by the time of Doctor Miller's return from the United States on October 15. Since that time he has been labeling the collection and working on his paper on the Subanuns. It is impossible at the present time to label the museum material properly because the necessary data are lacking. A large part of this material was sent to the exposition at St. Louis and through constant handling and packing several times many of the labels were either misplaced or lost. These we will replace gradually as we are able to identify the specimens.

Through various interruptions, caused partly by Doctor Miller's absence in the United States and trips taken into the provinces, Mr. Christie's paper on the Subanuns has long been delayed, but it is hoped that he will soon have it ready for publication. It will begin with an historical chapter. This will contain: First, a résumé of references made to the tribe by earlier observers, beginning with Pigafetta, and an account of the historical relations of the tribe with church and state in the Philippines. The second section will treat of the relations between these pagans and the Mohammedan incomers, and will give an account of the amount and manner of payment of tribute to the Moros down to the advent of the American régime.

The next chapter will give an account of the material culture of the Subanuns, and will consist of three sections—the first dealing with the Subanun

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house, clothing, furniture, implements, etc., the second with their agriculture, and the third with their trade.

The third chapter will treat of the individual in his or her social relations. It will deal with such subjects as the customs regarding birth, marriage, and burial.

Social control will be the subject of the fourth chapter. Such subjects as the chieftainship and the exercise of the punishing power will be considered, and a scale of punishments as prescribed by the customary law will be given.

The next three chapters will deal, respectively, with Subanun religion, tales, and language. The chapter on religion will include an account of several religious ceremonies, and a translation of some 15 set formulæ and prayers.

The chapter on language will give a vocabulary of some 400 words, a number of illustrative sentences in Subanun, and an historical tale in Subanun, Bisayan, and English.

Immediately upon his return from leave Doctor Miller began preparing for the press Doctor Saleeby's "History of Sulu," forming the second part of his "Studies in Moro History, Law, and Religion." This paper is now being printed. It will make a volume of about 220 pages and will give the history of Sulu from the earliest times about which anything could be learned to the present. It will contain four maps—one of the Sulu Archipelago, one of Sulu Island, and two of the town of Jolo—besides two diagrams showing the relationship of the various rulers of Sulu. It will be the most complete and authoritative account that has yet been published of the long struggle of the Spaniards with the Sulus and of American dealings with that fanatical tribe of Moros.

Before work on the history of Sulu was completed the translation was undertaken of a pamphlet published by the Royal Museum of Ethnology in Berlin, entitled "Directions for Ethnographic Observations and Collections in Africa and Oceanica." After a few minor changes had been made this was found to be well adapted to our use in the Philippines, and has been published by the bureau of science.

Doctor Miller also began work on a dictionary of the Bontoc-Igorot language, the material for which had been collected by Rev. Walter C. Clapp, of Bontoc. He found, however, that there were so many inaccuracies and inconsistencies and so many omissions to be filled in that it was necessary, on the return of Mr. Clapp from the United States in March, to ask him to revise the manuscript. This has been received again from Mr. Clapp, and will be sent to the printer very soon.

A paper by Otto Scherer on "The Batan Dialect as a Member of the Philippine Group of Languages," and another by Carlos Everett Conant on "F and V in the Philippine Languages" have just been received from the printer. These papers will not be of popular interest, but are valuable contributions to the study of Philippine etymology. They form parts 1 and 2 of Volume V of the publications of this division.

During March and April the north room of the museum building was fitted up and early in July the new cases ordered for it were received. These have not yet been accepted, owing to the failure of the contractors to carry out the specifications in some details. As soon as they have been made satisfactory, some of the specimens now in the south and middle rooms will be installed in the north room, thus relieving the crowded condition of the two former. This transfer is made especially necessary by the purchase from Dr. N. M. Saleeby in June of this year of a collection amounting to over 200 pieces and consisting mainly of Moro and Bagobo material. The Moro part of this collection, together with the Moro specimens which were the property of this division previous to this purchase, when properly installed, will very nearly, if not quite, fill the north room of the museum.

Of the collections now in the museum the most nearly complete is that from the Moros. This consists of an excellent series of weapons, coats of mail, and brass work. We have also a large assortment of Moro cloths, ranging from the coarse variety to a good quality of silk.

Next to importance to the Moro specimens come those from the Igorot country. These consist of cloth, clothes, baskets, pipes, spears, head axes, carrying frames, and copper pots. The Bagobo and Bilan tribes of Mindanao are represented by weapons, cloth and clothes made of manila hemp fiber, and carrying baskets made of hemp and elaborately decorated with beads.

The remainder of the collections is made up of small lots of specimens from the Manobos, Mandayas, Subanuns, and Bukidnons of Mindanao, the Mangyans of Mindoro, the Kalingas, Tinguians, and Ifugaos of northern Luzon, and some

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cloth, weapons, hats, and a few other things from the Christian population of the islands.

What we particularly need now is more material to fill up the cases which we have and others soon to be ordered. We should have a large collection of specimens illustrating the life and handiwork of the Christian tribes of the islands. We have almost nothing from these seven great divisions of the Filipino people. Hitherto more attention has been paid to making collections from the non-Christian tribes because their customs are rapidly changing, their old styles of dress are giving way to that worn by the Christian Filipinos, and certain arts are falling into disuse. It is believed that a considerable part of the lower floor, which is soon to be fitted up in the museum building, should be given over to an exhibit made from the Christian population of the islands. An attractive feature of the museum will be a series of colored transparencies, 11 of which have already been finished by Mr. Martin. These will show people of the various tribes, dances, and characteristic scenes colored as they are in life.

Besides those who are regularly connected with this division, there have been working in the islands for more than a year past Mr. Fay C. Cole and Dr. William Jones, both of the Field Museum of Natural History, Chicago. Both of these men are employees of the bureau of science, without pay. We expect to obtain from each of them some specimens from the tribes among which they have worked in exchange for some duplicate Moro articles which we have. We also anticipate that they will contribute articles on ethnological subjects to the Journal of Science. Mr. Cole has spent a large part of his time among the Tinguians of Abra, and Doctor Jones among the Ibilaos of Isabela. One other specialist in ethnology, Miss Laura E. W. Benedict, has also been in the islands for more than a year past, leaving within a few weeks. She has made an unusually complete and careful collection of specimens from the Bagobos of Mindanao. On her arrival in Manila from Davao, Mindanao, she spent several weeks in the museum building classifying and arranging her collection.

In April and during the first two weeks of May Doctor Miller was away from Manila, making a hasty trip through the province of Ambos Camarines to determine, if possible, to what tribe the non-Christian inhabitants of that province belong. These non-Christians may be divided roughly into three groups: First, those who live on the slopes of Mount Isarog and Mount Iriga. In Spanish times these people are said never to have come down into the lowlands and never to have permitted people from the lowlands to come among them. Now they seem to be entirely peaceable and orderly. Ethnologically, they are either a remnant of some former Malayan population or a mixture of the present Malayans with Negritos. Although Doctor Miller saw no people who seemed to be pure Negritos, there were many who showed traces of Negrito blood in hair, eyes, and lips, and a few in whom there appeared to be a large amount of Negrito blood. I am inclined, therefore, to think that these people are the result of crossing between a former Negrito population and the Malayans who surrounded them.

On the shores of the mainland about Siroma, on the Kalawat Islands and in a few other places are found scattered groups of the so-called "Dumagat" people, who form the second division of non-Christians of this province. They appear also to have some Negrito blood in them. They live for the most part in small groups by themselves, not far, however, from the settlements of the Christian Filipinos.

The third group of non-Christians is made up of settlements of Negritos scattered throughout Northern Camarines from the Pacific Ocean to the China Sea. These are as pure-blooded Negritos as any Doctor Miller has seen in the islands.

On June 12 Doctor Miller went to Nueva Vizcaya, under directions from the secretary of the interior, to attend an Ibilao canao at Dupax and Ifugao canaos at Banawi and Kingian. So far as he could learn the canao at Dupax was the first which the Ibilaos had ever attended. There were 46 people present, a few of them women and children. It is believed that next year many more people will come. At both Banawi and Kiangan there were many hundreds, if not even several thousand.

These meetings of the people from various rancherias are doing much good. They make the people acquainted, and as they get acquainted they are much less inclined to fight one another and to go on head-hunting expeditions. They also furnish an occasion to make gifts to those chiefs who have been efficient in keeping their people in order and in capturing criminals. Doctor Miller returned from this trip to Nueva Vizcaya on July 12.

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This recent trip to attend canaos illustrates one of the most important functions of this division. The secretary of the interior, by virtue of the law placing the non-Christian inhabitants of the islands under his charge, has to make frequent trips of inspection, either in person or by a representative, to the provinces and rancherias occupied by the non-Christians. As his duties in Manila do not always permit him to go when occasion demands, it has become one of the essential functions of this division to represent him. The importance of having a representative of the central government visit the various provinces, especially those occupied by the non-Christian tribes, can not be overestimated. It not only furnishes an opportunity to the visitor to see that no abuses are being committed and that the government is being properly administered, but it arouses the ambition of the people to have their settlements neat and their houses well built and in good condition.

To carry on properly the work of this division we need another trained ethnologist to make studies and collections in the provinces. There are but two men now to do this work, and as either Mr. Christie or Doctor Miller must always be in Manila, the work of increasing the collections and of getting material for publication progresses slowly. We shall begin soon to make a card catalogue of the museum collections, beginning with the recently purchased Saleeby collection, and adding to the catalogue as we identify the specimens about which we are now uncertain. Slow progress will, however, be made on this work with the present museum force and while that of rearranging the collections is going on.

FISH AND FISHERIES.

OUTLINE OF WORK.

The work on our fisheries outlined at the beginning of the year has been steadily carried forward with the following ends in view:

1. To secure as complete a collection as possible of all Philippine fishes, cataloguing the specimens under the native, English, and scientific names.
2. To study the foods, life histories, distribution, and migration of useful fishes.
3. To discover the nature of the feeding and spawning grounds of the food fishes, to ascertain the period of spawning, the characteristics of the ova, the time required for, and conditions favorable to, hatching.
4. To see what methods and apparatus are used by the natives in the catching, curing, and drying of fishes, and to suggest such improvements as we know to be practicable.
5. To determine what protection can be given to young fish during the early stages of their growth.
6. To find places where fishes could be introduced profitably, or where pond culture could be inaugurated, or practical fish-cultural methods carried out.
7. To ascertain what are the enemies and the causes of the disappearance of useful fishes.
8. To list the price paid in each locality for fresh and salted fish, the quantity secured, and the amount exported and imported.
9. To obtain figures as to the quantity and value of all other fishery products.
10. To make an investigation of the pearl, sponge, and coral fisheries.

To carry on this work, Mr. Seale has had the help of three native assistants, one of whom is an artist, who has reproduced in colors the chief characteristics of the specimens assigned to him; another is a practical fisherman; and the third is a water Moro, who is an expert diver and experienced fisherman.

FIELD WORK.

Five months of the past year have been spent in the field and a fairly representative collection of Philippine fishes, to the number of about 8,000 specimens, has been secured. Numerous new species and others hitherto unrecorded from the Philippines have been taken. During the investigation in the Gulf of Davao, Mindanao, 212 different species were taken in one day. It is believed that this record has never been equaled. Considerable time while in the field has been given to the study of the pearl fisheries.

THE DAVAO PEARL BANK.

The Davao pearl bank received Mr. Seale's undivided attention for several days, most of the time being spent on the pearling boats that were working on the spot. Numerous specimens of shells and oysters were secured. This bank

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is located in Pagquipuian Strait, the most prolific part of the bed being in the narrow portion of the strait between Point Laua and Linao. The bed seems to owe its existence to the protection of the big reef called Arboles Island, in the upper part of the strait, and to a strong eddy at the lower part, which permits the spat to settle down and attach. The bed is in from 16 to 30 fathoms of water. The bottom is smooth, of coral sand and broken shell; the banks drop abruptly down from the fringing coral reef into 15 to 16 fathoms, except in one or two places, where the shore is of sand, sloping at a sharp angle into deep water.

About 60 tons of shell, valued at ₱43,000, were taken from this bed between January 1 and May 1, 1908. The yield of pearls was small, probably not worth more than ₱10,000, most of them being of very irregular shape but of good luster. It was a pleasure to find that the bed was fairly well stocked with young oysters and that the adults were spawning freely. If the laws are properly obeyed the Davao pearl bank will continue for a long time to yield a fair number of shells each year.

At the date of Mr. Seale's report (May 20, 1908) four pearl boats were still at work on this bed whenever the current would permit, but the large shells were so well gathered that the results were small, the average number being not more than three for each dive.

Nine pearling licenses have been issued at Davao since January 1, 1908. They were to the following nationalities: One Arab, 1 Japanese, 2 Assyrians, 1 Greek, 1 Spaniard, 2 Filipinos.

It is probable that other pearl banks will be found along the south coast of Mindanao, and a marked increase of interest in pearling will probably develop during the coming year.

It would be expedient to bar corporations from this industry and permit only people having the political rights of citizens of the Philippine Islands to hold licenses. The pearling laws should be uniform for the entire archipelago. It would also be advisable to have each diver register and take out a license, forfeiture of the license being the penalty for bringing up undersized shells.

SPONGE FISHERIES.

Sponge fisheries which will prove to be of considerable value commercially have been located during the past year. The first shipment from the Sitanki sponge bank arrived in Zamboanga on June 3, and will be shipped to Singapore. These sponges are of fine, soft texture, very tough and elastic. They compare favorably with the best grade of the Florida "sheep's wool sponge," and doubtless a good price will be realized from them. At Sitanki 20,000 sponges have been taken.

Curing sponges.—The curing of sponges is a very simple process. When in the water the commercial sponge is black and slimy, growing in a depth of from 30 centimeters to 30 meters or more. The sponge is first taken up either with the hands or with a hook on the end of a pole. It is then placed on shore or on a platform in the sun for a day or two, until dead. Afterwards it is placed in an inclosure built on the edge of the salt water and allowed to remain for eight or ten days, a man going over the sponges each day, or as often as is necessary, squeezing out the sponges and beating out shell or pieces of coral. They are then threaded on strings and allowed to dry. They may also be bleached by dipping them in soapsuds two or three times and placing them in the sun. Chemicals are also used, but they damage the fiber more or less.

Regulation of sponge banks.—Prompt regulation of the sponge fisheries is urgently needed. Even the very youngest sponges are being taken, and unless some measure is introduced to prevent this the beds will be entirely destroyed. A law should be enacted prohibiting the taking of sponges less than 10 centimeters through their least diameter at the center. In the opinion of Mr. Seale it would be well to declare all inshore sponge grounds to be government property, subject to lease for a long period at a nominal rent. In this way every sponger will care for his ground and allow the sponges to grow to full size instead of depleting it, as would be the case under a short lease. Each man should buoy and enter his claim; a given amount of work should be required each year. One thousand yards square would be a fair size for a claim, with provision that an additional claim, or even two, might be taken by the same individual on payment of a larger fee to the government. Corporations should be rigidly excluded. The law should be uniform for the entire archipelago, as there are also good sponge banks in the vicinity of Masbate and Cebu.

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OTHER WORK.

In addition to carrying on the work outlined above we have been able to supply considerable information to commercial fishermen regarding the drying, salting, and curing of fishes for the trade. It is our opinion that improvement can be effected in the curing of fish and a much better product secured. Experiments to that end are now being conducted. It is also our endeavor to interest investors in establishing a fish canning establishment. This enterprise would be justified, owing to our abundant supply of fine anchovies and sardines. Such a cannery would relieve us of the necessity of importing $85,000 worth of sardines from foreign countries each year.

OTHER FISHERY PRODUCTS.

Mr. Seale found some precious red coral while carrying on the investigation in the Gulf of Davao. Only a small spray was encountered, but this was enough to prove the existence of this organism. This specimen was found in a little bay at Digos, on the west side of the gulf. The coral beds of Japan yield ₱600,000 worth of coral each year, and it is to be hoped that those which undoubtedly exist in the Philippines will soon be located.

In the Gulf of Davao the sea slug (*Holothurian*), called *trepang* on *bor* when dry, is extremely abundant.

FISHERY EXPORTS AND IMPORTS.

During the nine months from January 1 to September 30, 1907, the Philippines imported ₱125,452 worth of fish from the United States, ₱28,234 worth from Canada, and ₱166,948 worth from Spain (chiefly sardines) and ₱76,576 worth of shellfish from China. We exported to the British East Indies during this time ₱110,000 worth of pearl shell, ₱32,582 worth of tortoise shell, and ₱56,448 worth of other fish products. The list of exports and imports as given in the "Quarterly Summary of the Commerce of the Philippine Islands," prepared in the bureau of insular affairs for the nine months from January 1 to September 30, 1907, is as follows:

Exports:	
Pearl shell	₱111,124
Tortoise shell	33,082
Fish	97,918
Trepang, etc	64,762
Total	306,886
Imports:	
Salmon	148,020
Other fish	197,890
Shellfish	86,910
Other sea products	65,942
Total	498,762

Thus, our fishery imports for this period exceeded our exports by ₱191,876, a condition for which there can be no good excuse as it simply shows our failure to utilize the rich natural resources of the Philippine waters.

THE LIBRARY.

For the first time in the history of the library it is possible to report satisfactory progress in the work of permanent organization.

PERSONNEL.

The position of assistant librarian provided for in the appropriation bill for the fiscal year 1908 was filled by the appointment of Miss Sarah E. Osgood on January 15, 1908. Temporary employees selected from lists of students submitted by teachers in the various schools of the city have been of great assistance and have proved very satisfactory. During the school year these students work only in the afternoons, but for two months of the long school vacation we had several of them for all day.

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REARRANGEMENT OF STACKS AND FURNITURE.

In order to secure a greater degree of quiet for the readers in the library, a rearrangement of stacks was effected during December, 1907, and January, 1908, by which a workroom was secured containing no book stacks except those around the walls. In this room have been placed all typewriters, except such as are needed for special pieces of work, and it is hoped that this need may soon be met in some other way, so that all typewriters may be banished from the main library rom. In the workroom the classification, shelf listing, and cataloguing are carried on with greater freedom from interruption than would be possible in that used for reading; all incoming mail is sent at once to this room also, thus avoiding the danger of loss of publications before record is made. Such an arrangement of stacks and furniture was impossible so long as the main library room needed to be kept free for an assembly hall, but with the establishment of the Philippine Medical School a hall was available for this purpose, giving opportunity for a more economical and convenient arrangement of the library.

At the time the above changes were made the stacks and shelves were carefully inspected and put in good condition by the staff of the engineer's division, who also extended the stacks to the ceiling on one wall of the workroom, thus adding 84 feet of shelving. These upper shelves are used for duplicate material and stores, thus relieving the shelves in the regular stacks. Six double periodical stacks of red narra, matching other library furniture, have also been secured during the year, furnishing 432 additional feet of shelving for current periodicals and serials.

The need of shelf space will be a pressing one in the near future. It would seem that a fireproof library placed in the proposed new wing would be the most economical solution of this problem, which must be met in some way within the next two years.

ORDERS OUTSTANDING AND FILLED.

Orders for 188 titles have been placed through the bureau of supply during the year, and all old orders, with the exception of 70 titles (many of which have been filled in part), have been received. Among the more important sets may be mentioned the following: "Annals and Magazine of Natural History," "Proceedings of the Zoological Society of London," "British Journal of Dermatology," "Library Journal," "Public Libraries," "Dingler's Polytechnisches Journal," "Compte rendu de la IX Session du Congres géologique international (Vienna, 1903)." In all, 1,834 bound volumes and approximately 950 unbound volumes and parts have been added to the library. Several hundred single numbers of periodicals ordered during 1907 have come in and the completed volumes bound. Orders have been forwarded every few months claiming numbers not received and supposed to have been lost in the mail. Lists have also been sent to our dealers from time to time for such publications as it was evident that we could not secure from the publishers. A large number of these orders are still unfilled, and as a result many volumes are waiting incomplete for binding. This will doubtless remain one of our most troublesome problems, because of the long distance between our library and the place of publication of our subscriptions and exchanges.

ACCESSIONING.

All bound volumes received by purchase or by transfer before June 1, 1906, and all bound volumes received from any source since that date have now been accessioned, making up a total of 15,283 volumes. All unbound publications received prior to October 23, 1906, have been accessioned, giving a total of 8,760. Besides the unbound material received since the above date, there remain a number of gifts, exchanges, etc., received bound before June 1, 1906, yet to be accessioned.

CLASSIFICATION AND SHELF LISTING.

Since February 1, 1908, work has progressed rapidly on permanent classification and shelf listing, 10,364 complete volumes and 534 unbound parts have been classified and marked, and shelf-list cards completed for all. It is planned to make a copy of the shelf list as rapidly as completed to serve in the reading room as a classified catalogue until the dictionary catalogue is available for use.

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PRINTED CARDS.

One large shipment of printed cards from the Library of Congress has been received and filed. Proof of all cards issued by that library is sent regularly. From this proof orders are made by checking numbers desired and reporting on other cards furnished for this purpose. The proof is then cut to card size and filed for reference.

Printed cards for the bulletins of the United States Geological Survey, for the annual reports of the Smithsonian Institution, and for the receipts of the John Crerar Library, Chicago, during 1905 and 1906, have also been received and filed.

ACCESSION RECORD FOR CURRENT PERIODICALS.

The scheme for recording current periodical receipts was changed at the beginning of 1907 from the accession book to cards, but until the plan was tested only a temporary list was made up. At the beginning of 1908 cards were prepared which will serve for a number of years without rewriting titles (for monthly publications space is available for 20 years). Care was taken in deciding upon the form of entry to make each title uniform with the entry form in the shelf list and catalogue. It is proposed to print this list to show the resources of the library in periodical and serial publications. Publications of which we have complete sets will be indicated. This list now includes a number of titles which will be withdrawn when the permanent catalogue of the library is available for use. The bureau of printing has delivered 885 bound volumes to the library and still has 523 volumes to be bound.

EXCHANGES.

Many valuable publications have been added to the exchange list of the Philippine Journal of Science and a number of institutions have donated complete sets of their publications in return for the previous publications of the various divisions of the bureau of science. It is regretted that a complete list of these donations and other gifts can not be included in this report. There is a growing demand for the earlier publications of the bureau, many of which are now out of print. Requests of institutions and libraries and also of individuals especially interested in the particular publication requested are filed, and as rapidly as these publications are received from any source the particular numbers desired are forwarded. It has been possible to fill a number of such requests during the past year through the courtesy of the secretary of the interior, who returned a considerable number of copies of the earlier bulletins to the library.

The preparation and mailing of the circulars for the Philippine Journal of Science has been supervised in the library during the past year, but the routine mailing of the journal has been attended to by the business office and stenographers. Cards to contain records of publications sent from all divisions of the bureau and of all advertising matter concerning the Philippine Journal of Science have been printed and a careful revision of the mailing list is now in progress.

USE OF THE LIBRARY.

Wth the greater freedom from noise and from interruptions in the reading room, the use of books in the library has noticeably increased. Reference books have for the first time been reserved. No record is kept of these, but in addition 8,135 books, periodicals, and pamphlets were withdrawn from the library by 177 borrowers. Statistics of the number of publications borrowed from the main library and from other bureaus of the department of the interior have been tabulated to December 31, 1907.

LOAN DESK.

The service at the loan desk is still far from satisfactory, but plans have been formmulated which, it is hoped, will bring about an improvement. However, these can not be carried out until the work of organization has been further perfected, nor until we can keep a clerk at the desk during the entire time that the library is open each day.

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THE PHOTOGRAPHER.

The routine work of the photographer is given by the following table:

Prints sold to other bureaus, individuals, and prints made for the various departments of the bureau of science	6,694
Prints made for the album	1,700
Enlargements, 14 by 17	36
Negatives, 5 by 7	610
Negatives, 8 by 10	218
Skiagraphs, 8 by 10	12
Skiagraphs, 11 by 14	4
Transparencies, 8 by 10	78
Transparencies, 5 by 7	3
Lantern slides	315

Mr. Martin, the photographer of the bureau, was closely occupied with the work in Manila during the greater part of the year, but he was able to make a trip to Taal volcano and another trip of three weeks to La Laguna Province during the month of January, 1908. All of our negative envelopes have been typewritten and catalogued during the year, the work keeping four typewriters employed for five weeks and another for three months.

THE CLERICAL DIVISION.

This work, which has greatly increased in volume during the past year, was in charge of Mr. A. D. Tanner during Mr. Nell's absence on leave, and since the return of the latter we have practically had a full force, so that many needed improvements in filing and bookkeeping could be carried through.

There is only one question seriously hindering the work of this division. At the beginning of each fiscal year we have endeavored to have our books on appropriations balance with those of the auditor, but so far have been unsuccessful, owing mainly to the fact that our bookkeeper signifies on each voucher or warrant the proper fiscal year to which the expenditure should be charged, whereas the auditor may disregard our notations and charge them against some other account without notification. As long as this method is continued it is obviously impossible for our bookkeeper to make his books balance with those of the auditor.

This question is a very serious one because the law provides that the officer having charge of an appropriation must certify on each requisition that funds are available. The auditor has not therefore given us a statement showing the actual balance available at certain periods, nor does he advise us in each instance of any changes in the charging of vouchers and warrants. It is therefore impossible for the director of this bureau to know authoritatively from the auditor at all times whether or not funds are actually available—the balances as shown by our books naturally not being accepted by the auditor.

A great improvement would be instituted if that official were to furnish each bureau with a statement of the appropriation accounts at the end of each month, showing thereon the balance available at the end of the previous month and an itemized statement of the vouchers and warrants charged against the separate appropriation accounts. If such a statement, in his opinion, would take too much time, the bureaus themselves could make them up and have them audited so as to be returned within a short time.

PAUL C. FREER,
Director of the Bureau of Science.

THE SECRETARY OF THE INTERIOR,
Manila, P. I.

NOTE.—The following has been omitted from this report and is on file in the Bureau of Insular Affairs, War Department: TABLE I.—Comparative table of routine work performed and supplies manufactured and disposed of during the fiscal year 1908, as compared with the fiscal year 1907, by number or quantity. The itemized details of Tables II, III, IV, and V have also been omitted, and only the totals are given.

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TABLE II.—*Comparative table of routine work performed (free and cash) and supplies manufactured and sold during the fiscal year 1908 as compared with the fiscal year 1907, by value.*

[July 1, 1908.]

Division of the bureau.	1907.[a]	1908.	Decrease.	Increase.
Chemical laboratory division	.....	₱43,456.50	.....	.....
Section of mineral analysis and standardization of weights and measures	.....	4,212.90	.....	.....
Biological laboratory division	.....	97,242.00	.....	.....
Serum section of the biological laboratory	.....	42,952.90	.....	.....
Miscellaneous	.....	4,461.93	.....	.....
Total	₱162,925.96	192,326.23	.....	₱29,400.27

[a] Not itemized for the fiscal year 1907.

TABLE III.—*Comparative table of cash receipts for the fiscal year 1908 as compared with the fiscal year 1907.*

[July 1, 1908.]

Division of the bureau.	1907.[a]	1908.	Decrease.	Increase.
Chemical laboratory division	₱2,737.30	₱10,020.60	.....	₱7,283.30
Section of mineral analysis and standardization of weights and measures	1,222.00	2,771.50	.....	1,549.50
Biological laboratory division	753.70	502.00	₱251.70	.....
Serum section of the biological laboratory	52,173.94	42,952.90	[b] 9,221.04	.....
Miscellaneous	7,530.52	4,274.11	3,256.37	.....
Total[c]	64,417.46	60,521.17	3,896.31	.....

[a] Not itemized.
[b] In 1908 charge made for bottling, standardizing, etc., only; previous year charge made for drawing serum, etc.
[c] Difference in this table and Table V—this is work completed; V is cash received.

TABLE IV.—*Showing free and cash work performed and supplies sold to the various departments of the government for the fiscal year 1908. (Free work estimated in accordance with Act 807, section 1, bureau of government laboratories, last paragraph.)*

[July 1, 1908.]

Bureau or department.	Free.	Cash.	Total.
Bureau of health	₱91,795.00	₱28,323.89	₱120,118.89
Bureau of public works	8,540.00	57.64	8,597.64
Bureau of navigation	820.00	.....	820.00
Bureau of agriculture	237.00	6,820.17	7,057.17
Bureau of audits	22.00	.....	22.00
Bureau of customs	685.50	.....	685.50
Bureau of science	2,109.36	.....	2,109.36
Bureau of printing	528.00	10.00	538.00
Bureau of supply	1,534.40	50.85	1,585.25
Bureau of internal revenue	198.00	9.14	207.14
Sewer and waterworks construction of the city of Manila	.....	7,555.00	7,555.00
Bureau of constabulary	310.00	52.00	362.00
Public health and marine-hospital service	.....	472.00	472.00
Department of sanitation and transportation of the city of Manila	.....	24.00	24.00
Philippine Medical School	.....	952.71	952.71
United States Army and Navy	.....	7,145.82	7,145.82
Bureau of education	420.00	161.70	581.70
Bureau of prisons	24,419.00	.....	24,419.00
Total	131,618.26	51,634.92	183,253.18

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TABLE V.—*Comparative statement showing expenditures (including obligations incurred) for the fiscal year 1908 as compared with the fiscal year 1907.*

[July 1, 1908.]

Item.	1907.	1908.	Decrease.	Increase.
Apparatus, supplies	₱83,618.33	₱80,355.47	₱3,262.86	.....
Transportation and freight	10,131.45	15,268.22	.....	₱5,136.77
Miscellaneous	32,574.39	54,427.71	.....	21,853.32
Salaries and wages	211,863.87	212,987.18	.....	1,123.31
Total	338,188.04	363,038.58	.....	24,850.54

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APPENDIX E.

REPORT OF THE DIRECTOR OF LANDS.

DEPARTMENT OF THE INTERIOR,
BUREAU OF LANDS,
Manila, August 17, 1908.

SIR: I have the honor to submit the annual report of the bureau of lands for the fiscal year ended June 30, 1908.

The organization as shown in the last annual report has not been materially changed during the year, although, whenever possible, positions filled by Americans when supervising Filipino employees have been consolidated in order to reduce expenses and to increase the share of work and the responsibilities of Filipino employees wherever efficiency could be maintained by so doing.

Except for the technical work of surveying, drafting, and computing, the work has been current, but it will probably be impossible for many years to come to keep abreast of the demand for surveys and the consequent computation and drafting required. This is due to two causes; primarily, the great amount of work to be done, and secondly, the lack of technical and qualified workmen to do the work when funds are available therefor.

The personnel has increased from 637 employees, June 30, 1907, to 965, June 30, 1908. The increase is due to the fact that more survey parties are in the field, more computers and draftsmen are employed in the office, and more laborers are at work on irrigation repairs. The number of employees in the central office of the bureau at Manila has been increased during the year so that the available quarters have become congested, and with the new employees expected additional quarters will soon be necessary.

Funds have been appropriated for the construction of a vault, which is very much needed for the safe-keeping of plans, descriptions, etc., and it is expected to have the same available within a reasonable time.

The scope of the work has been considerably increased during the year by the enactment of Acts Nos. 1854 and 1875, the first relating to irrigation and providing that the administration of government irrigation systems shall be under the control of the bureau of lands and the second relating to the general supervision of all surveys made for the court of land registration. It is not expected, however, that during the coming year an increased personnel will be necessary, except that which has already been provided for in the appropriation for 25 additional surveyors, but it is, however, probable that when any extensive irrigation works are completed an increase will be necessary.

The transfer of the office of the bureau to Baguio, by your orders, was of such importance that the following statement is submitted:

The director and a stenographer proceeded to Baguio on March 14, and were followed by the assistant director, 6 Americans, and 10 Filipino employees. An office was established in one of the government buildings, where the headquarters of the bureau were located until June 1, with an average force of 8 American and 14 Filipino employees. The result of this move, which was in the nature of an experiment, proved conclusively, to my mind, that it would be advantageous to the government to transfer as many of its employees to Baguio during the hot season as possible, for the conservation of health and the increased efficiency while there and after return to Manila. While no physical examinations were made, the weights of the individuals, taken upon arrival and at the date of their departure, showed a gain in each employee of from 5½ to 15 pounds. No illness to the employees was occasioned by the change of climate and conditions, and in fact it is believed that all benefited thereby. The Americans were subsisted and quartered at the Hotel Pines, while the Filipino employees occupied tents, where a mess, which also provided for Filipino employees of other bureaus, was conducted under the charge of one of the employees of the bureau at an expenditure of approximately ₱0.70 per diem.

The total expenditure of the bureau occasioned by the transfer to Baguio may be stated as follows:

Salaries and wages: Cook, carpenter, house boys, janitor, etc	₱402.74
Supplies, including lumber for office furniture, floors to tents, and extra supplies necessary for the Baguio office	168.23

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Transportation of supplies and equipment from Manila to Baguio and return		₱394.15
Postage and telegrams, extra expense on account of office in Baguio		208.34
Subsistence and quarters:		
Americans	₱2,212.17	
Filipinos	747.71	
		2,959.88
Transportation:		
Railway—		
Americans	276.56	
Filipinos	186.73	
		463.29
Stage or auto—		
Americans	248.60	
Filipinos	273.42	
		522.02
Baggage—		
Americans	22.35	
Filipinos	3.16	
		25.51
Total		5,144.16

While the expenditures shown in the foregoing statement average about ₱2,000 per month, it may be stated that it was necessary to manufacture office furniture and fixtures, mess furniture and fixtures, and to transport to Baguio nonexpendable supplies and equipment which would not again be necessary, and approximately ₱600 was invested in furniture and equipment, which still remains on hand.

The expense of subsistence and quarters for the American employees at the Hotel Pines was, to my mind, excessive, as I believe that subsistence should be furnished to Americans at a maximum of ₱70 per month with a profit to the caterer. This being the case, and the rate at the Hotel Pines being ₱120 per month, indicates that quarters were paid for at the rate of ₱50 per month, which is believed excessive when it is considered that from 2 to 5 employees were quartered in one room, and thus the government was paying from ₱100 to ₱250 for room and service, which could be furnished for 20 per cent of this amount. I believe it possible, under the best conditions, to subsist and quarter Americans in Baguio for ₱75 per month and Filipino employees for one-third of that amount, including first-class food and accommodations.

As a partial offset to the expenditures of the bureau during its sojourn in Baguio it may be stated that several employees have signified their intention of foregoing their vacation leave this year on account of their stay in Baguio, and as the value of the vacation leave of those who went to Baguio exceeds ₱3,000 for the year, it may be assumed that one-half of this will be saved on account of the Baguio trip, which will also reduce the expense of the bureau while in Baguio.

In conclusion it may be stated that the result of the transfer of the bureau of lands to Baguio has been beneficial beyond expectations, and to my mind the expense of this experiment has been practically offset by the advantages to the employees and their increased efficiency to the government service, and I therefore recommend that for the coming year this bureau be authorized to transfer to Baguio as large a number of employees as accommodations may be secured for, provided that funds are available to pay the expenses, the rate of which per employee will be reduced materially in comparison with that for the past year. Looking to the future, it is suggested that the bureau be authorized to begin the preparation of plans for a permanent building in Baguio sufficient to accommodate the entire bureau, with quarters for the employees.

The question of a proper legal advisor is one which has caused much anxiety in the past and should receive immediate consideration. More than a year ago an appropriation was requested for a law clerk, but the commission denied the same upon the promise of the attorney-general to furnish this bureau with a qualified attorney. Upon a request to the attorney-general for the assignment of such an attorney, the bureau was informed that, owing to the great amount of work in the attorney-general's office, it was impossible to do so, and up to the present time it has been compelled to send to the attorney-general every item upon which legal advice appeared indispensable or in which legal representation was desired. Many cases in which legal advice should have been

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obtained have been acted upon according to the best judgment of the administrative officers, which, in some cases, has proved disadvantageous to the government. This is a very unsatisfactory condition of affairs, occasions delays, the assignment of attorneys not familiar with this class of work, and, in my opinion, jeopardizes the best interests of the government. The needs of the bureau for an attorney are imperative; one who is familiar with the land laws of the Philippine Islands, who shall become familiar with the ramifications of the duties of the bureau of lands, whose services may be continuous in guiding the officers and employees, and who shall be available for consultations at all times, and I may say that if such an attorney were assigned by the attorney-general's office, his time would be all employed by this work, not only as to the subject of public land and the disposition thereof, but also the subjects of friar lands, water rights, mining rights, the protection of the public domain before the court of land registration, the registration of titles of the government, and many other questions which are continually arising where legal advice should be available precedent to the action of administrative officers. It is therefore urgently recommended that a qualified attorney be assigned from the office of the attorney-general, who shall at all times be available for the work of the bureau of lands.

Statement is made hereafter of the work of the bureau under the natural subheads and the different divisions of the bureau, followed by recommendations and a financial statement.

FRIAR LANDS.

Some change has been made in the administration of the friar lands during the year by the consolidation of offices administered by American agents. During previous years the Malinta, Tala, and Piedad estates have been administered by an American agent located at Polo, while the San Marcos, Matamo, Binagbag, Dampol, Guiguinto, Lolomboy, and Santa Maria de Pandi estates were administered by an American agent located at Bocaue. The American agent at Polo has been relieved and a Filipino subagent installed, who is under the immediate direction of the agent at Bocaue. While formerly a separate agent was maintained for the Naic estate and for the Santa Cruz de Malabon and the San Francisco de Malabon estates, now one agent administers the 3 estates, having a subagent in Naic. Consolidation has also been effected in Laguna Province, where formerly 2 agents administered 4 estates, which are now controlled by 1 agent at Biñan, having a subagent at Calamba. Thus there are now employed only 6 American friar lands agents as compared with 7 during the previous year; one agent being employed to relieve any agent that happens to be on leave and for such other work as of necessity arises during the re-leasing of an estate or preparation for sale. The subagents employed have been men who have been trained in the service, and understand thoroughly their duties in connection with the leasing and re-leasing of friar lands.

The work on the friar estates has not been hampered during the past year by political agitation to such a degree as was formerly the case, although the usual number of petitions requesting the reduction of the rents or their suspension have been received, but except in a very few cases has it been shown that tenants were unable to pay their rents, although the rice crop on the estates north of Manila was in some cases smaller than in previous years. On the other hand, by improvements in the irrigation systems increased crops on some estates have resulted, the cultivation of sugar, especially on the estates in Laguna and Cavite provinces, has been extended to a considerable degree, new animals have been purchased, and tracts which have been for more than ten years uncultivated have been cleared and cultivated. This has been true particularly on the Santa Rosa estate, owing to the benefits of the friar lands loan fund and the efforts of the bureau of agriculture, which will be referred to in detail elsewhere in this report.

The Matamo, San Marcos, Dampol, and Binagbag estates have been registered in the court of land registration, and the Talisay-Minglanilla and Orion estates are now in the court pending registration.

The following statement shows the standing of each estate at the close of the year, the current and nonrecurrent expenses, receipts, interest charges, and the deficit: [a]

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[a] A table showing in detail the segregation of expenses for each estate has been omitted and filed in the Bureau of Insular Affairs, War Department.

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Statement showing progress of friar land estates during fiscal year ended June 30, 1908.

Name of estate.	Area purchased.	Percentage of area June 30, 1908.			Leases and sale certificates June 30, 1908.				
					Number.		Area included.		
		Estimated occupied.	Surveyed.	Sold or leased.	Leases.	Sale certificates.	Hectares.	Ares.	Centares.
	Hectares.								
Banilad	1,925	80	100	63.2	702	.....	1,216	71	23
Binagbag	295	80	100	19.5	196	25	57	42	33
Bifian	3,659	70	100	59.5	1,805	.....	2,177	93	18
Calamba	13,673	25	100	17.2	1,205	.....	2,355	9	54
Dampol	926	100	100	100	335	36	927	52	35
Guiguinto	946	90	100	78.8	342	.....	745	51	42
Imus	18,243	40	100	33.6	3,028	.....	6,145	63	94
Isabela	19,891	1	100	.5	60	.....	79	31	0
Lolomboy	5,178	60	100	39.4	1,600	.....	2,044	35	48
Malinta	3,574	95	100	94.1	922	.....	3,364	22	85
Matamo	12	100	100	100	1	.....	11	72	91
Muntinlupa	2,827	80	100	53.7	293	.....	1,517	81	97
Naic	7,624	60	100	50.7	1,176	.....	3,867	76	64
Orion	916	80	100	41.2	26	384	377	18	2
Piedad	3,860	85	100	83.6	509	.....	3,228	24	0
San Francisco de Malabon	11,449	45	100	39	1,570	.....	4,461	52	37
San Jose	23,266	None.	100	None.	.....	.....	.....	.....	.....
San Marcos	87	100	100	100	.....	1	87	32	89
Santa Cruz de Malabon	9,795	30	100	17	1,149	.....	1,660	74	83
Santa Maria de Pandi	10,342	80	100	40.6	2,266	.....	4,194	94	22
Santa Rosa	5,470	70	100	64.3	1,206	.....	3,515	2	62
Tala	6,696	20	100	10	466	.....	735	47	9
Talisay	8,020	70	100	14.5	1,995	.....	1,275	11	61
Total 23 estates	158,677	38.8	100	26.7	20,652	446	44,046	62	49
Total 23 estates, fiscal year 1907	158,677	32	60.1	22.6	22,229	.....	35,832	0	0

Name of estate.	Leases and sale certificates June 30, 1908.		Annual interest on purchase price at 4 per cent.	Expenses fiscal year 1908.		
	Annual receipts contracted for.	Receipts fiscal year 1908.		Account expenses administration.	Account expenses irrigation.	Total current expenses.
Banilad	₱9,271.52	₱6,846.04	₱8,479.98	₱1,562.86	.....	₱10,042.84
Binagbag	625.94	905.80	1,434.91	156.76	.....	1,591.67
Bifian	21,129.42	22,855.66	24,063.33	4,731.33	₱930.59	29,725.25
Calamba	18,397.66	14,697.17	55,417.73	9,734.29	744.53	65,896.55
Dampol	9,192.67	5,762.79	6,025.90	1,041.81	.....	7,067.71
Guiguinto	7,763.42	8,417.21	6,222.72	964.53	.....	7,187.25
Imus	30,412.69	26,662.39	82,880.97	13,074.05	2,678.06	98,633.08
Isabela	596.12	998.62	12,788.64	1,438.45	.....	14,227.09
Lolomboy	13,976.57	11,268.61	38,929.65	6,044.36	.....	44,974.01
Malinta	17,367.12	14,020.82	17,616.85	4,328.21	.....	21,945.06
Matamo	115.24	115.24	67.29	2.30	.....	69.59
Muntinlupa	4,441.58	1,776.12	3,507.08	640.17	.....	4,147.25
Naic	31,309.74	27,192.78	39,308.46	7,559.68	1,037.66	47,905.80
Orion	5,860.64	13,342.53	3,922.01	1,370.48	.....	5,292.49
Piedad	9,957.92	7,239.33	13,213.74	2,148.90	.....	15,362.64
San Francisco de Malabon	31,400.12	44,806.66	42,794.99	6,769.48	1,475.63	51,040.10
San Jose	2,400.00	2,780.00	23,902.57	963.23	.....	24,865.80
San Marcos	565.60	881.84	492.99	2.30	.....	495.29
Santa Cruz de Malabon	11,711.44	13,255.40	41,496.50	6,569.61	2,621.50	50,687.61
Santa Maria de Pandi	22,696.23	29,854.54	42,185.49	6,418.16	.....	48,603.65
Santa Rosa	25,953.38	15,177.89	36,409.39	9,487.00	810.17	46,706.56
Tala	4,235.36	4,656.22	8,964.35	1,415.32	.....	10,379.67
Talisay	10,780.50	7,402.08	44,311.48	8,183.09	.....	52,494.57
Total 23 estates	290,160.88	280,915.74	554,437.02	94,606.37	10,298.14	659,341.53
Total 23 estates, fiscal year 1907	241,937.24	226,627.63	554,437.02	85,620.09	17,026.67	657,083.78

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Statement showing progress of friar land estates, etc.—Continued.

Name of estate.	Deficit fiscal year 1908.	Surplus fiscal year 1908.	Extraordinary noncurrent expenses fiscal year 1908.		
			Account surveying.	Account irrigation.	Total.
Banilad	₱3,196.80		₱3,779.16		₱3,779.16
Binagbag	685.87		3,739.60		3,739.60
Bifian	6,869.59		4,092.17		4,092.17
Calamba	51,199.38		18,394.90		18,394.90
Dampol	1,304.92		612.02		612.02
Guiguinto		₱1,229.96	5,078.70		5,078.70
Imus	71,970.69		31,407.19		31,407.19
Isabela	13,228.47		2,182.96		2,182.96
Lolomboy	33,705.40		14,943.48	₱6,536.13	21,479.61
Malinta	7,924.24		4,986.39		4,986.39
Matamo		45.65	3.17		3.17
Muntinlupa	2,371.13		5,893.16		5,893.16
Naic	20,713.02		10,605.11		10,605.11
Orion		8,050.04	1,672.61		1,672.61
Piedad	8,123.31		9,706.61		9,706.61
San Francisco de Malabon	6,233.44		19,884.58		19,884.58
San Jose	22,085.80		1,029.72		1,029.72
San Marcos		386.55	17.50		17.50
Santa Cruz de Malabon	37,432.21		27,345.89		27,345.89
Santa Maria de Pandi	18,749.11		24,535.72	14,413.50	38,949.22
Santa Rosa	31,528.67		10,770.40		10,770.40
Tala	5,723.45		13,624.00		13,624.00
Talisay	45,092.49		24,782.47		24,782.47
Total 23 estates	388,197.99	9,712.20	239,087.51	20,949.63	260,037.14
Total 23 estates, fiscal year 1907	430,456.15		206,489.18	13,861.96	220,351.14

Summary.

	Administration.	Surveying and drafting.	Irrigation.	Total.
Salaries and wages	₱71,364.00	₱195,233.27	₱25,149.21	₱291,746.48
Supplies	6,423.63	29,093.87	3,932.20	39,449.70
Transportation	4,142.64	9,385.66	1,039.01	14,567.31
Miscellaneous expenses	4,023.68	3,375.41	84.00	7,483.09
Per diems	2,704.55		1,043.35	3,747.90
Furniture and fixtures	1,081.04			1,081.04
Printing	3,533.88			3,533.88
Postage and cables	2,414.03			2,414.03
Total	95,687.45	237,088.21	31,247.77	364,023.43

A comparison of the above statement with the figures submitted in the last annual report shows a decrease of 1,577 leases, which is accounted for by the fact that a considerable number had expired near the end of the present fiscal year and have not been renewed at this writing. This decrease, however, is partially counterbalanced by the execution of 446 sales certificates within the last three months of this year, which, taken into consideration with the number of valid leases now outstanding, gives an increase in areas contracted for, in both leases and sales certificates, of 8,214 hectares, with a total annual income derived from both the leases and sales certificates of ₱290,160.88, an increase of ₱48,223.64 over the contracted income as reported in the last annual report. The total receipts from both leases and sales amounted to ₱280,915.74, an increase of ₱54,288.11 over the receipts of the last fiscal year. The cost of administration of the various estates amounted to ₱94,606.37, showing an increase of ₱8,986.28 over the cost of administration for the corresponding period for the previous fiscal year, while the expenses for the incidental repairs to and maintenance of the irrigation systems show a decrease of ₱6,728.53, as against the figures representing this item of expense for the corresponding period as shown in the last report of this bureau. The expenses of surveying have amounted to ₱239,087.51, an increase of ₱32,598.33, while the account for

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permanent construction of and extraordinary repairs to the irrigation systems shows an increase of ₱7,087.67 over similar expenditures for the fiscal year 1907.

It will also be noted from the foregoing report that four estates—Guiguinto, Orion, Matamo, and San Marcos—are now producing revenue in excess of the expenses, and that instead of a deficit for the present fiscal year there is a surplus of ₱9,712.20, which subtracted from the deficit of ₱388,197.99 arising from the other estates gives a net deficit of only ₱378,485.79, a reduction in the deficit of the last fiscal year of ₱51,970.36.

NEW LEASES.

Up to the date of the last annual report nearly all leases which had been executed were based upon areas supposed to be occupied by the lessee, but as these expired new leases have been made on many of the estates upon the following plans:

Wherever the actual area of a parcel has been determined upon an estate which has been classified for sale, leases have been made on a basis of annual rent at 5 per cent of the appraised value of the parcel. Wherever the area of the parcel concerned has not been definitely determined but the survey of the estate has been completed and the planimeter area of the parcel has been determined, the land is leased on this area on a basis of 5 per cent of the appraised valuation, or if the estate has not been classified the same rate per hectare which was formerly charged has been used, but the area changed as determined by the planimeter. In nearly all cases this rerenting of the land has resulted in an increase of the rent for each parcel, as the areas were originally underestimated, and the rent paid heretofore did not equal 5 per cent of the appraised valuation of the estate. It was originally intended to charge 6 per cent of the appraised valuation, 4 per cent of which was an offset as against the interest charges on the friar lands bonds, 1 per cent for administration charges and 1 per cent to go into the sinking fund, but tenants protested against this charge and it was reduced to 5 per cent, which appears to be the least that can be charged and cover the interest and the cost of administration on these estates.

The work of re-leasing during the present year has only been completed on a few of the estates, but as it progressed the area included in leases and the income from rents has been materially increased. If this increase continues on all the estates, barring those unoccupied, such as San Jóse and Isabela, the fixed charges on the friar lands would be provided for as soon as the re-leasing has been accomplished, and it is confidently expected that during the next year at least 15 will enter the condition, as far as contracted rentals are concerned, of self-supporting estates. Two will never enter this condition, as they are practically without tenants, unless some method of colonization is employed. The other 6 will be given special attention with regard to obtaining new tenants thereon, as has been done on the Muntinlupa estate and is being done on the Calamba estate. In this manner it is hoped to materially decrease the deficit on friar lands within the next two years until only the deficit accruing on the San Jóse and Isabela estates exists, and if agricultural conditions improve it may be possible to colonize these or to sell portions of them in such a manner as to eliminate the annual deficit thereon, but in any event the process will be a slow one, requiring patience and perseverence under discouraging conditions.

SALES.

During the year the Matamo, San Marcos, and Dampol estates, which were offered for sale during the preceding year, have again been offered for sale, and under the new conditions which exist the San Marcos estate has been disposed of, the Dampol estate is being disposed of, and the Matamo estate has been leased with the probability of sale; and, in addition, the Binagbag and Orion estates have been offered for sale and will probably be entirely disposed of within a short time.

Additional sales of estates will be made as soon as the computations of the areas of the parcels have been completed, but inasmuch as the legislature declined to appropriate ₱79,000 for the employment of additional computers to complete the computations on friar lands within one year, there will be some delay in securing the actual areas on many estates. When it is understood that there are on friar lands 50,000 parcels of land averaging eight angles and sides

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to each parcel, it will appear clear that the computing work is a tremendous task.

The approximate sale dates of the balance of the estates not yet offered for sale are as follows:

During the six months ending December 31, 1908: Guiguinto, Banilad, Malinta, Santa Rosa, and Muntinlupa.

During the six months ending June 30, 1909: Isabela, Lolomboy, Biñan, Tala, Naic, and San Francisco de Malabon.

During the six months ending December 31, 1909: Calamba, Santa Cruz de Malabon, and Santa María de Pandi.

During the six months ending June 30, 1910: Imus, Piedad, and Talisay-Minglanilla.

Thus anticipating that within two years every estate will have been offered to the tenants for sale, provided the present force of employees available may be used for computing purposes, but if the surveys for the court of land registration becomes imperative, it will of necessity, without further appropriation for this specific work, result in further retarding the computation on the friar lands surveys. On the other hand, it is hoped that with the increased personnel authorized by law for the surveying force of this bureau, and the large amount of work which it is expected the bureau will undertake for private parties, the earnings will be sufficient to considerably augment the force of computers now at work, the appropriation bill having authorized the employment of the computers requested, but made no provision for their payment except from the receipts from operations, and as the receipts from the work performed by these computers, when it is finished, goes into the friar lands sinking fund, and will be collected in years to come, other receipts from operations must be used to assist in this departemnt of the work.

NEW LEGISLATION.

There was submitted in March a proposed amendment to the friar lands act, No. 1120, which, in two important particulars, sought to modify the old law; first, by changing the method by which sales of unoccupied friar lands could be made, the old provisions of law appearing entirely unsuited for the purpose, being the provisions of the public land act, Chapter II, which provides that not more than 16 hectares could be sold to an individual. This provision alone precluded the sale of large tracts of friar lands which would have been burdensome to the government for many years to come, as the price paid was high and the interest must be met on the bonds issued. Said act also provided for the surveys in subdivisions. This was impracticable on friar lands except on unoccupied estates. The law also provided for advertisement after an application had been made to purchase, which was an added expense to the purchaser of from ₱20 to ₱100, and as the price at which friar lands must be sold to reimburse the government is high, the additional expense of advertising appeared almost unwarranted.

Again, the most liberal provision for the payment for lands sold under the provisions of the public-land act is 1 installment at the expiration of five years from the date of the award, which was not sufficiently liberal to induce sales, as the original friar-lands act permitted bona fide occupants to pay in 10 equal annual installments. Again, the rate of interest provided under the public-land act is 6 per cent, while the rate under the friar-lands act on deferred payments to bona fide occupants was only 4 per cent.

These recommendations were made to you with the understanding that it was the intention to sell the friar lands at such prices as would reimburse the government for the total outlay on account of the purchase of said lands. Therefore it appeared reasonable that the land should be sold at the cost price to the government at the date of sale, deferred payments to bear interest at the same rate the government paid on its bonds, i. e., 4 per cent.

This amendment, which met your approval, was accepted by the Philippine Legislature, with the proviso that before unoccupied lands were offered for sale the people in the towns where the land was located should be notified of the proposal to sell, by public crier, in order that they might have an equal chance with others to purchase. There seems no particular objection to this notification if the presidentes of the towns concerned do their duty, as it appears that their written certificate that this notice has been given, is necessary before the sale.

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The second amendment proposed was for the purpose of extending the time in which the installments for payment of friar lands may be made. The original friar-lands act allows ten years from the date of purchase in equal annual installments. The amendment as provided in act of 1847 extends the time to within one year of the date of maturity of the friar-lands bonds, which is the year 1832; therefore the time is extended from ten to twenty-five years. It was necessary to have such an amendment, as the cost of agricultural lands on friar estates will range from ₱5 to ₱300 per hectare, and the annual payments on a ten-year basis, with interest, would thus range from ₱0.75 to ₱42 per annum per hectare, and very few of the occupants of the better class of land would have been able to meet their annual payments, as the net income from a hectare of land varies greatly, and it would have been impossible for many to have annually met the payments at these figures. On the new basis, land, say, which may be sold to the purchaser at ₱300 per hectare, will, on a twenty-five year basis, have annual installments, the maximum of which will approximate ₱23 per year, which, it is believed, ordinarily may be paid. However, it is not intended to apply the long term to the large number of town or urban lots which will be sold, as there is no necessity therefor. The amendment also provided for either annual or semiannual installments, which will be advantageous in some instances. These amendments to the friar-lands act are so important to the administration of these lands that it is believed that more progress will be shown during the next fiscal year than in all the preceding years since the purchase of the friar lands. Already many tracts of land have been leased to new occupants of estates, as they can now be assured of the right to purchase their holdings, and tenants who formerly declined to purchase on a ten-year basis are agreeable to purchase on a twenty or twenty-five year basis, as they may reasonably expect to be able to meet their annual or semiannual installments.

FRIAR LANDS LOANS.

In the last annual report a statement was made as to the recommendations of this bureau relative to making loans on friar lands for the purpose of obtaining an extension of the cultivated areas. This bureau recommended that the surplus funds remaining from the purchase of the friar estates be utilized for the making of loans. However, the Philippine Commission disapproved of such use of this fund, but enacted the friar lands loan act, No. 1736, which set aside from the general revenues ₱100,000 for the purpose of establishing a reimbursable fund, to be known as the "Friar lands loan fund," which should be available for the making of mortgage loans upon growing crops and salable commodities manufactured therefrom, work animals, warehouses, mill houses, and machinery, and other property both real and personal belonging to the actual and bona fide cultivators of the friar lands, and the extension of the cultivated areas on said estates. The act further provides the method of handling this fund, for the preparation of regulations to be approved by the secretary of the interior, and the measures to be taken to safeguard the interests of the government. As this legislation was enacted so late in the year it was almost impossible to make available the funds for the sugar crop, which should be planted in November, December, and January. However, the following regulations were immediately promulgated and approved:

Regulations concerning friar lands loan fund act.

I. These regulations are issued in accordance with the provisions of the friar lands loan fund Act, No. 1736.

II. Until further instructions, loans made from this fund shall be made only for the purpose of placing under cultivation sugar lands included within the Santa Rosa, Calamba, Biñan, Imus, San Francisco de Malabon, and Santa Cruz de Malabon estates, and the consequent encouragement of the sugar-growing industry on said estates.

III. Not more than 80 per cent of the total fund shall be withdrawn and loaned at any one time.

IV. All loans shall bear interest at the rate of 12 per cent per annum, which interest shall begin to accrue from the date of each advance of funds made upon any mortgage loan.

V. The terms of any loan shall be the actual and necessary period required for the preparation of land for planting and cultivation of the land, for the harvesting and manufacture of sugar crops into salable commodities, and such additional time awaiting sale of said commodities as may be determined by the

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director of lands: *Provided*, That in no case shall the term of any loan exceed twenty months.

VI. Mortgage loans may be made upon growing sugar crops, which term is intended to include the harvested sugar cane and any salable commodity manufactured therefrom; work animals indispensable to proper cultivation of sugar lands; warehouses and other buildings for storage of sugar crops; mill houses and machinery utilized for the purpose of manufacturing sugar cane into salable commodities; and any other property, both real and personal, which may be accepted as collateral security for the payment of the mortgage debts: *Provided*, That mortgages only upon buildings of strong material shall be accepted as collateral security.

VII. Bona fide occupants and cultivators of sugar lands upon the designated estates, of lawful age, and leasehold tenants of the government of the Philippine Islands, who are in need of financial aid to properly cultivate, harvest, and manufacture into salable commodities the sugar crops which they desire to produce from the lands held by them in lease, may apply to the director of lands, through his local agent, for mortgage loans to the amounts required.

VIII. Each application shall be sworn to and subscribed by the applicant lessee, and shall set forth:

(*a*) The name, age, sex, and residence of the applicant, and the estate upon which the land held in lease is situated.

(*b*) The number of hectares of sugar lands which the applicant intends to place under cultivation and the location of such land.

(*c*) The amount of funds necessary for the planting, cultivation, harvesting and manufacture of the sugar crop which he intends to grow, in excess of the available resources of the applicant.

(*d*) The number and kind of work animals which the applicant intends to purchase, the total cost of same, and the amount required for their purchase in excess of the available resources of the applicant.

(*e*) The number and kinds of warehouses, mill houses, and machines which require repairs, the value of such property if repaired, the total cost of such repairs, and the amount necessary for this purpose, in excess of the available resources of the applicant.

(*f*) A complete schedule of all buildings, machinery, work animals, and other property, both real and personal, owned by the applicant, the location, valuation, and condition of same, and the amount and nature of each incumbrance thereon, if any.

(*g*) A statement of the liabilities of the applicant, with the names of all creditors, the amounts of the debts, if any, the security, and such other facts as will inform the director of lands of the financial status of the applicant.

IX. Applications for loans shall be presented to the local agents of the director of lands, who shall make an immediate and careful investigation of the facts therein stated, and after indorsing upon said applications the results of the investigations, the local agents shall transmit same to the director of lands for his approval or disapproval, whose action shall be final and conclusive.

X. Tenants whose applications have received the approval of the director of lands shall be notified to execute mortgages covering the growing sugar crops and salable commodities manufactured therefrom, work animals, warehouses, mill houses, and machinery, for which funds are required to pay the purchase price or to place the property in a condition to serve effectually the purpose for which intended. The mortgages shall also cover such other property, both real and personal, described in the loan application, which may, in the discretion of the director of lands, be held as collateral security for the redemption of the mortgages. All mortgages so executed shall receive the approval of the secretary of the interior before becoming valid and effective, and shall then be registered at the expense of the mortgagor in the province or provinces in which the land under cultivation and the property mortgaged is situated.

XI. In consideration of the mortgages the director of lands shall place to the credit of the mortgagors upon the official records of the fund, the amounts of the loans as designated therein, which shall be advanced to the mortgagors in accordance with the following provisions:

(*a*) For the purpose of planting, cultivating, harvesting, and manufacturing the sugar crops into salable commodities, and for the marketing of same, not more than ₱100 each cultivated hectare, which shall be advanced—

For clearing and plowing the land, not to exceed ₱10 per hectare, to be advanced after plowing is finished.

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For planting, including cost of puntas, not to exceed ₱10 per hectare, to be advanced after planting is done.

For cultivation, not to exceed ₱15 per hectare, which shall be advanced as each stage of the cultivation is completed.

For harvesting and transportation to the mill, not to exceed ₱25 per hectare, to be advanced after the crop is cut and delivered at the mill.

For milling, boiling, transportation, and other expenses incident to marketing, not to exceed ₱40 per hectare, to be advanced as required for the purposes enumerated.

Provided, That when any determinate part of the work mentioned in the 5 preceding paragraphs has been completed, advance may be made accordingly.

(*b*) For the purpose of repairing machinery, mill houses, warehouses, and other buildings essential to the cultivation of the sugar crop, not more than 30 per cent of the total cash value thereof, to be advanced upon the completion of the repairs.

For the purpose of purchasing farm implements and machinery, not to exceed 50 per cent of the total cash value thereof.

(*c*) For the purpose of purchasing the necessary work animals, not more than 50 per cent of the total cash value thereof, to be advanced after the purchase is made; only such animals to be accepted as have been duly registered and passed upon by a qualified veterinarian.

(*d*) For the purpose of collateral security upon advances made in accordance with the foregoing subsections, all property, both real and personal, shall be accepted as security at not more than 50 per cent of the total cash value thereof, as determined by the director of lands.

XII. No advances shall be made except upon the presentation by the mortgagors to the director of lands or his local agents, of all pay rolls, vouchers, or other evidences of expenditures, which may be required to verify the actual and necessary disbursements of the mortgagors, nor shall such advances be made until careful inspections have been made by the local agents for the purpose of verification of purchases of animals claimed to have been bought, repairs to buildings and machinery accomplished, and agricultural work done by the mortgagors.

XIII. Before the acceptance of buildings for the security of any loan the same shall be insured against fire for the full term of the loan for the full value of the mortgage held thereon at the expense of the mortgagor.

XIV. All mortgages shall contain stipulation that funds advanced thereunder shall be used solely for the purposes therein designated, and that any failure or neglect to so use the funds, or to properly plant, cultivate, harvest, or manufacture the sugar crops, or to otherwise observe the explicit terms of the mortgage agreements will work a forfeiture of the mortgages and terminate the periods of loans as expressed in the mortgage notes, resulting in foreclosure proceedings or any other actions that may become necessary to protect the interests of the government of the Philippine Islands.

XV. Upon the completion of the harvesting of sugar crops or the manufacturing thereof into salable commodities the director of lands may give written permission to the mortgagors to remove from the premises and to sell such part of such crops or commodities over and above the value of such part as may be necessary for the satisfaction of the mortgage debts and the accrued interest thereon. With the proceeds of such sale the mortgagors shall immediately apply same on the mortgage debts and accrued interest thereon, together with the fees for the discharge and release of the mortgages.

XVI. Upon the breach of any mortgage condition the director of lands shall declare a forfeiture of the mortgage, and, after applying to the mortgage debt the balance of all funds appearing to the credit of the mortgagor upon the records of the friar lands loan fund, he shall proceed to the foreclosure of such mortgage for the recovery of all advances made thereunder, together with the accrued interest thereon and the costs of the foreclosure proceedings.

XVII. Whenever it shall become necessary for the protection of the interests of the insular government for the director of lands to assume absolute control over the cultivation, harvesting, manufacturing, or marketing of the crops subject to mortgage, the necessary expense occasioned thereby may be advanced, under the direction of the secretary of the interior, from any surplus moneys belonging to the friar lands loan fund which may be made available for this purpose. These advances shall be reimbursed to said fund out of the proceeds arising from the final disposition or sale of such crops or the commodities manufactured therefrom.

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XVIII. Any question arising in connection with the administration of the friar lands loan fund which is not covered by the foregoing regulations shall be submitted in writing to the secretary of the interior, whose ruling thereon shall be final and conclusive, and shall become a part of these regulations for the government of the director of lands in any similar case which may thereafter arise.

By authority of the secretary of the interior:

_____,
Director of Lands.

Approved:

_____,
Secretary of the Interior.

There were received during the months of November, December, and January 14 applications for loans—6 from bona fide occupants of the Santa Rosa estate, 6 from the Imus estate, and 1 each from the Bifian and Calamba estates. Of these all the loans were approved, but the applicant on the Calamba estate has so far failed to obtain the registration of his mortgage and the loan is still pending. The total loans made aggregate ₱11,690, of which ₱11,000 were used for the purchase of draft animals, including 51 carabaos and 29 bullocks, to be used for the cultivation of sugar lands on the friar estates in Cavite and Laguna provinces. The securities given for these loans were valued by the appraisers at ₱24,905, in addition to the mortgages on the growing crops. All these loans were made for periods of twenty months each, with interest at the rate of 12 per cent per annum. The disbursement of this money was on the order of the borrower direct to the cattle dealer in payment for the animals purchased, and thus no opportunity was given the borrower to dispose of the funds borrowed otherwise than agreed upon. At the present writing all the animals purchased are in good health and have given good satisfaction, and the result has been an increase in the cultivated area of sugar land on the Santa Rosa estate to upward of 120 hectares, with the probabilities of the harvesting of a splendid crop from this area, when there should be no difficulty in the payment of the loans made, except for the probability that further loans will be required to further increase the cultivated area. The increased area under cultivation has not been due alone to the benefits from these loans, as the animals were purchased so late in the year that the plowing of this land had been accomplished by the bureau of agriculture with a steam plow, and this subject is reported on under a separate paragraph.

Many informal applications for friar lands loans have been received, but nearly all were either from the estates to which the loan privilege had not been extended, or were for the cultivation of other crops than sugar, and recommendations regarding such loans will be made in the near future. If other bona fide tenants of sugar lands do not desire to avail themselves of the loan privilege, it may be advisable to extend it to other estates and under other conditions, viz, the cultivation of other crops than sugar; but it is believed that during the coming year further loans will be made, especially if steam plowing can be done by the bureau of agriculture, as the experiment of the last year has demonstrated that it can be successfully accomplished. The most that can be expected of the friar lands loan fund of ₱100,000 is that it will eventually increase the cultivated areas on the estates to which it is applied to the extent of 1,000 hectares. However, this 1,000 hectares, once under cultivation and producing a crop, will give the cultivators great assistance in further extending the cultivated areas, so that eventually all the land available will be in use. Great difficulty has been encountered in getting the securities for friar lands loans in such shape as to be available for use as such, and as the chattel-mortgage law is new and its terms are not understood, many delays have occurred. The cost of making loans has so far been nominal, the agents of the estates attending to this work in addition to their regular duties; but there appears to be no good reason why the whole ₱100,000 should not be loaned out in the near future for the benefit of the friar lands and the bona fide occupants thereof, and if this experiment is successful, it would appear to be an indication of what can be accomplished through agricultural banks, although the method of procedure would be somewhat different, land being the basis of the loan rather than the security accepted on friar lands loans.

STEAM PLOWING ON FRIAR LANDS.

In October, 1906, an agreement was entered into between the bureau of agriculture and this bureau, acting for the bona fide occupants of the Santa Rosa estate, to place thereon one of the steam plows belonging to the bureau of agri-

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culture, for the purpose of determining the utility of steam plowing on the sugar lands, the tenants of the estate agreeing to pay ₱5 per hectare for the plowing and to furnish fuel and water for the plow. The plow was accordingly sent to this estate and began work in December, 1906, but owing to the nature of the soil the plows then in use were not capable of doing the work expected of them. The bureau of agriculture then undertook a series of experiments, until in March, 1907, it had succeeded in manufacturing a plow which would accomplish the results desired in the soil of the Santa Rosa estate, and under the conditions there found, and during the year past they succeeded in plowing 218 hectares for the tenants of this estate, who, however, failed to comply with the conditions that they would furnish fuel and water, as they did not understand the nature of the undertaking, and were unable to furnish dry firewood. The bureau of agriculture thereupon shipped coal to Santa Rosa to be used for plowing, this bureau agreeing, with your approval, to reimburse that bureau for its outlay, with the understanding that the beneficiaries—the tenants of the estate—would reimburse this bureau for the outlay upon the maturity and sale of their crops. The bureau of agriculture, being short in the appropriation for the work, was reimbursed by this bureau for the total outlay for plowing for the tenants on the Santa Rosa estate in the sum of ₱1,933.47, part of which has since been collected by this bureau, and the balance, which, under the original agreement, is not due from the cultivators until the crop has been harvested and sold, will be taken care of by advancing to these cultivators from the friar lands loan fund sufficient to cover their indebtedness to the bureau of agriculture, the securities for which loans will be the chattel mortgages on the growing crops or the salable commodities to be manufactured therefrom. It may be stated that the result of the steam plowing on the Santa Rosa estate has been successful and should be continued and extended to other estates in so far as the resources of the government will permit, and it is believed that a very much greater efficiency and reduced cost per hectare may be obtained. To this end, the bureau has requested the assignment of a steam plow to a portion of the Calamba estate, which appears susceptible to steam plowing, being a plateau of several hundred hectares in extent, perfectly level, and considered first-class soil for sugar cultivation.

Many difficulties beset the path of the bureau of agriculture in its experiments which have been overcome and will no doubt be explained in the report of the director thereof on this subject, but it is believed, if further work is done, little dependence should be given to the promises of the tenants that they will furnish either fuel or water, as the task appears beyond their capacity to handle, and it would appear more advisable to fix upon a cost price which would cover these items, and to authorize the bureau of lands to guarantee the bureau of agriculture payment on behalf of the tenants for the land plowed, requiring the tenant to make out a loan application and enter into the usual loan conditions, giving a mortgage on his crop for the payment of the plowing in case he can not meet the payment prior to the harvesting and sale of his crop. It is also understood that a steam plow is working on sugar land on the Imus estate, although the status of the work has not been reported and the conditions under which it is being accomplished are unknown to this bureau, the agreement as to the plowing having been made between the tenants benefited and the bureau of agriculture.

If steam plowing on the sugar lands of the friar estates proves as successful as may now be anticipated and the occupants of these estates become able, through the work of the steam plow and the friar lands loan fund, to purchase their own steam plow, it is more than probable that all estates in Laguna and Cavite provinces will in the future be sold as provided in the friar lands act.

OTHER EFFORTS TO INDUCE OCCUPATION AND CULTIVATION OF FRIAR ESTATES.

Since the passage of the amendment to the friar lands act, persistent efforts have been made to induce occupation and cultivation of the unoccupied portions of the friar estates. This has been done by the offer of special inducements to those who will undertake the occupation and cultivation of large areas. Thus, on the Tala estate, of which only a small percentage has heretofore been occupied, a contract has been entered into for the occupation and the eventual cultivation and sale of all the unoccupied portions thereof, the occupant agreeing to immediately begin the cultivation of the estate; to cultivate 200 hectares the first year, 600 the second year, 1,000 the third year, and 500 additional hectares per year thereafter until the entire area of the estate is under cultivation. He further agrees to lease as a minimum 300 hectares the first year, 900 the second year, 1,500 the third year, and 500 additional each year until all the available land on the estate has been leased, paying therefor at the

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rate of ₱0.30 per hectare per annum for each one leased, provided that no crop has been harvested thereon, and ₱1.50 per hectare per annum for each one which produces a crop, the word "crop" being construed to mean a marketable crop harvested from the leased lands which shall net the owner a minimum of ₱20 per hectare, but not to be considered to include that crop which may be planted for the purpose of preventing the growth of cogon or other vegetation injurious to long-term crops. The occupant has the further privilege of leasing any land which may in the future be abandoned by the present occupants at the rate formerly leased to the one who abandoned or vacated it. The occupant agrees to keep trespassers from the lands, and may sublease any of the lands occupied or leased by him. This contract would also, under the provisions of the amendment to the friar lands act, grant to the occupant the right to purchase when the estate is ready for sale, at the price fixed by the friar lands act.

Other inducements of a similar nature have been offered and are under consideration for contracts of land on the Cavite and Laguna estates, as well as on the Piedad estate in Rizal Province, and it is probable that within the year this estate will have been practically occupied under similar conditions.

Further inducements will be made (such as the improvements to roads, repairs, and reconstruction of irrigation systems) in order, if possible, to secure the cultivation of the friar estates at the earliest practicable moment, as upon their cultivation depends, to my mind, the date of their final disposal, as without cultivation practically no sales will be made, the price of the land being so high, whereas once under cultivation and with an income from crops, the occupants may be induced to purchase on the installment plan.

RESERVATIONS FOR INSULAR, PROVINCIAL, AND MUNICIPAL PURPOSES.

From time to time applications have been received by this bureau for reservations for various public purposes on friar estates. No doubt, in the minds of many, misapprehension relative to the status of friar lands has existed which included them as part of the public domain, and thus open to reservation the same as other public lands. This bureau has maintained that the friar lands were not in the same category as public lands; were purchased with the proceeds of the bond issue; and if any department of the government needed portions thereof for public purposes, such portions should be purchased and paid for at some future date when the lands were available for sale and the valuation determined the same as if they were private. This position has been maintained by your approval, and while many reservations have been made and leases executed, rent free, with municipalities, it has always been with the understanding that this question would be definitely determined at some future date by the proper authorities, and I believe as a matter of policy that in no instance should portions of the friar estates be finally disposed of without reimbursing the friar-lands fund from some source for the full value as determined by the usual methods. Thus, either the friar-lands fund or the securities on which the bonds were issued may always be maintained in their integrity; and whenever any of the property which secures the bonds is disposed of, a proportionate increase in the sinking fund will be effected; otherwise the disposition of portions of lands to bureaus of the insular government, to provinces or municipalities, is merely indirect appropriation which must be met at some future date by an appropriation covering the deficit in the friar-lands fund. It would appear advisable to make direct appropriations for the reimbursement of the friar-lands fund for all property which the various branches of the government require rather than to grant the properties to the branches of the government and later make up the deficit to the friar-lands fund.

Rumors have been current, coming from different sources, that the friars were repurchasing portions of land on the friar estates at a much less price than the government had paid for them. As you well know, these rumors are absolutely without foundation, and up to the present time not 1 meter of land purchased from the friars has been disposed of by the government, and under the law and the policy relating to friar lands no land will be sold at less than cost price to the government plus the cost of administration and survey to the date of sale, with interest at the rate of 4 per cent per annum from the date of purchase to that of sale.

Relative to the sale value of friar estates under the regulations approved for the computation thereof, the same once fixed is not changed except by the addition of interest at 4 per cent. Some questions have been raised as to the cost of administering friar lands after the sale value has been fixed and as to how the government was to provide for the reimbursement for the adminis-

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tration of unsold parcels after the same had once been fixed. This will appear when it is stated that the annual cost of administration of friar lands will not exceed 1 per cent of their value. The interest paid by purchasers on deferred payments, or the interest which is added to the sale value of any parcel of land after the date on which said value is fixed, runs at the rate of 4 per cent per annum, while the interest on the friar lands bonds, nominally 4 per cent, as a matter of fact averages only about 3.1 per cent, owing to the premium at which the bonds were sold; therefore the apparent expense to the government of the cost of administration will be covered by the premium on the bonds.

CLASSIFICATION OF ESTATES PREPARATORY TO SALE.

The work on the classification of the estates has continued, and during the year the Santa Rosa estate in Laguna Province, the Orion estate in Bataan Province, and the Malinta estate in Bulacan Province have been classified. The classifications were accomplished by a committee, as stated in the last annual report, consisting of one tenant on the estate, the friar lands inspector of this bureau, with ex-Governor Arturo Dancel as chairman of the committee, the former chairman, Don Pablo Tecson, having accepted a position with the bureau of agriculture. The work of this committee has been very satisfactory, and there is submitted herewith a table indicating the different classifications of the estates and the difference in values given to trees, etc., which is owing to the location and availability for transportation purposes and the general size and condition due to the character of soil and other conditions, which only appear after investigation on the ground. The Matamo and San Marcos estates need no classification, as the character of the soil and improvements thereon are practically the same throughout each estate.

The work of the classification committee will continue as the actual areas of the estates become known, with the probabilities that during the coming fiscal year the Banilad, Muntinlupa, Lolomboy, Isabela, Biñan, Naic, and Tala estates will be classified.

Appraisement of friar lands.

[Per cent.]

Class of land.	Dampol, Bulacan.	Binagbag, Bulacan.	Guiguinto, Bulacan.	Santa Rosa, Laguna.	Orion, Bataan.	Malinta, Bulacan.
Agricultural lands used for rice exclusively:						
Irrigable—						
First class				100	100	.....
Second class				80	80	.....
Third class				60	60	.....
Fourth class, subject to yearly overflow from bay					30	.....
Nonirrigable—						
First class	100	80	100	90	80	100
Second class	80	70	80	70	60	80
Third class		60	60	50	40	60
Fourth class		50				40
Fifth class						20
Sixth class						10
Used for sugar cane, corn, etc.:						
First class		100			90	.....
Second class		90			70	.....
Third class					50	.....
Fourth class					30	.....
Lots, urban:						
First class	400			500	400	.....
Second class	300			300	300	.....
Third class					200	.....
Fourth class					100	.....
Lots, rural:						
First class	200	100	150	200	300	300
Second class	100		100	150	200	200
Third class				100	100	100
Fisheries:						
First class					100	400
Second class		40			60	300
Third class					40	200
Fourth class						100
Bamboo, per clump		₱1.00		₱3.00	₱5.00	₱2.00
Mango trees, each			₱8.00	₱8.00	₱3.00	₱8.00
Ilang-ilang trees, each			₱8.00			₱6.00
Tomaules, garden truck, vegetables, melons, etc.:						
First class		100				.....
Second class		90				.....

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In the annual reports of this bureau for the fiscal years 1906 and 1907 mention was made of a controversy between the municipal officials of Santa Rosa, Laguna Province, and the Philippine Sugar Estates Development Company over a plot of ground facing the plaza in Santa Rosa.

It was contended by the municipality that the lot in question had for many years been used as a market site during the rainy season. On the other hand, the Sugar Estates Company contended that even though a portion of said lot had been so used, such use had been merely on sufferance, and the consent of the friars had in every case been secured beforehand. Furthermore, that only a portion of said lot had been used as a market site, and that it was absolutely necessary that the lot pertain to the hacienda building in order to give an unobstructed entrance from the street to the building retained by the company.

The company originally claimed the entire lot and alleged that the same had been reserved by it from the sale to the government, but as stated in the report of this bureau for the preceding fiscal year, it has now modified its demands in this respect and is willing to relinquish all claim to that portion of the lot adjoining the warehouse and take that portion directly in front of the hacienda building.

During this fiscal year the assistant director of this bureau made a personal investigation of this matter, and after thoroughly reviewing same was convinced that the contention of the company, in its modified form, was reasonable and just and that the portion of such lot which the company was willing to relinquish was ample and sufficient for the requirements of the municipality, such portion being that used as a market site during past years.

Recommendations were therefore made to the secretary of the interior to the effect that the lot be divided in the manner indicated, and authority being secured therefor, the municipal officials were then informed of the action taken and, further, that they would be expected to abide by the terms of the agreement and the matter considered closed. To this they replied by a resolution dated April 12, 1908, declining to accept on their part the division made by this bureau, in effect denying the authority of the secretary of the interior to settle the matter in his discretion. The matter was then referred to the secretary of the interior, with a recommendation that the same be transmitted to the attorney-general, with instructions to enjoin the municipality of Santa Rosa to refrain from seeking to control the plot of land in question which had been awarded to the Sugar Estates Company. It is thought that upon receipt of instructions from the attorney-general the municipality will desist in its demands and that the matter will be closed.

COLLECTION OF RENTS.

Many conditions have impeded the collections of contracted rentals during the past year, but the principal reason for the noncollection of rents has been the desire to re-lease the estates wherever possible upon a basis of actual areas, and thus the bureau has refused rents in many instances until new leases could be prepared and the proper rent collected. This has no doubt reduced the actual income to some extent, but it is considered advisable to make only one change in the rent to a lessee, as such a change is always the cause of complaint and dissatisfaction, especially where the actual value of the lessee's holding becomes known, and is usually in excess of what was originally leased him. The shortage of the crop in the provinces north of Manila also tended to delay the collection of the rents, but, as a general rule, less trouble has been apparent in obtaining voluntary payments than heretofore.

During the year a number of suits were brought against the tenants, resulting as follows:

Office.	Filed.	Compromised.	Executions.	Pending.
Calamba	123	106	15	2
Cebu	10	5	0	5
Bifian	534	357	2	175
Bocaue	145	47	0	98
Imus	56	53	0	3
Naic	68	67	1	0
Polo	66	56	0	10
Santa Cruz de Malabon	147	127	20	0
Total	1,149	818	38	293

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These suits were brought entirely by the agents of the estates or clerks detailed for the purpose, but as a rule little difficulty is encountered in the justice of the peace courts, although at times the question of title to the land, the validity of the lease, and other questions not pertinent to the issue are brought in and discussed at great length, or the justice of the peace has failed to carry out the law, either through ignorance or intention. An occurrence in Naic is of importance, indicating the difficulties of the agents on estates in complying with their duties.

It was known by the agent for some time that wood was being cut on the estate and removed to Manila by the agents of one who had been refused a lease on a large tract of land which was desired merely for the purpose of cutting wood. After some efforts, the agent discovered two cartloads of wood passing through Naic about 2 o'clock in the morning, and after talking with the drivers of the carts, discovered who was responsible and claimed the wood, and next day called into the office the parties interested and advised them that he was about to file criminal charges against them, which he did. Shortly after the parties responsible for the taking of the wood filed charges in the justice of the peace court against the agent of the estate for defraudation of the government, and bail of ₱3,000 being required, was furnished. Immediately an additional charge was filed against the agent for estafa; ₱300 bail was required, and the agent was informed that other charges would be filed until he could no longer furnish bail, the idea being to have him jailed and thus be out of the way. The agent was furnished with legal advisors and the cases were transferred to the court of first instance. From an investigation by this bureau and a knowledge of the facts there is absolutely no evidence to substantiate the charges against the agent, and the party responsible for the taking of the wood has also filed a civil suit, claiming damages for injuring his character and for stopping him from selling the wood of the government. This attempt to jail the agent and thus dispose of him, so that the intrigues of irresponsible parties to deprive the government of its revenues on this estate might be continued, shows the difficulties with which an agent must contend. The party in question has many relatives in the town of Naic, and the value of the agent as an administrator would have been absolutely ruined had the attempt been attended with success. The attempt was nothing more than retaliation for the action of the agent in endeavoring to perform his duties, under specific instructions from this office to stop the theft of firewood from this estate.

IRRIGATION.

The maintenance of and ordinary repairs to the irrigation systems on the various friar estates have been attended to by this bureau during the past fiscal year, under the supervision of the agents in charge of the irrigated estates and a superintendent of irrigation, with the assistance of 9 foremen and a force of laborers.

On the San Francisco de Malabon, Santa Cruz de Malabon, Naic, Imus, Calamba, Santa Rosa, and Binan estates, no new work of importance has been undertaken by the bureau during this period, but all accomplished thereon has been confined to the ordinary and necessary repairs to the irrigation ditches, dams, retaining walls, and tunnels.

During the latter part of the present year the superintendent of irrigation was ordered to Bulacan Province for the purpose of making a thorough inspection of the irrigation systems on the Lolomboy and Santa Maria de Pandi estates, with the result that it was found that while the greater portion of the dams were in a fair state of preservation, they necessitated, however, a considerable amount of labor in the repairing of same, and that the irrigation ditches as a whole upon both of these estates required thorough cleaning out, and in some cases reexcavation to a considerable extent.

Upon the Lolomboy estate there have been cleaned and reexcavated approximately 20,400 meters of irrigation ditches, and a small amount of repair work was done to dams and culverts thereon.

On the Santa Maria de Pandi estate repairs were made to 9 dams, involving in most cases a considerable outlay of funds, and there were also cleaned, and in some cases reexcavated, irrigation ditches amounting to more than 13,000 meters.

The funds disbursed by this bureau from its appropriation during the present fiscal year upon the irrigation systems of the various estates, including the salary of the superintendent of irrigation, wages of foremen, ditch tenders, and laborers, and supplies used in the work of construction and repairing, freight

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charges, and other incidentals connected with this work has amounted to ₱31,674.23.

In addition to the maintenance and repair work on the irrigation systems on the friar estates by this bureau, the bureau of public works has had under its direct supervision the more extensive repairs to dams, ditches, tunnels, canals, etc. This work during the past year has been confined entirely to the irrigation of the estates in Cavite Province, where a large amount of reconstruction and repair work has been completed. Surveys and estimates have also been prepared for two new projects, one on the Imus estate and one on the Naic estate, on which it is hoped to begin work during the coming year. The expenditure by the bureau of public works is reported as ₱42,916.08 for the year.

The bureau of public works has also had charge of the repairs to the buildings on friar estates, and the hacienda building on the Lolomboy estate in Bulacan Province has been entirely overhauled, repaired, and placed in first-class condition. This involved a new roof for the entire building and an expenditure of approximately ₱6,500, although no reports have been received on this subject. Minor repairs were also made to the building on the Binan estate, and it is believed that during the coming year the buildings on the Calamba and Naic estates should receive the attention of the bureau of public works, in order to conserve same from further deterioration. As these buildings are large, strong-material buildings of considerable value, it is expected that the work will be undertaken early in the year.

CONDITIONS ON THE VARIOUS ESTATES.

Banilad.—The surveys on this estate have been completed, except the computations, and the areas of the different parcels have been obtained by the use of the planimeter. All the old leases have been canceled and new ones have been made on the basis of the planimeter areas. This has resulted in an increase of the area leased and the contracted annual rental. Some new leases have been obtained, and at the close of the year, out of a total of 1,417 parcels, 975 have been leased, with an annual contracted rental of ₱9,271.52, sufficient to cover the interest and administrative charges. The tenants have, as a rule, paid their rents when due, and very few cases of delinquent rent have been taken before the courts.

The officers of the army had selected a large portion of this estate for an army post, through the efforts of some of the prominent citizens of Cebu, but when it was discovered that this was not public land and that the government had outstanding bonds thereon, it is understood that the effort was practically abandoned.

A constabulary reservation has been authorized on the estate and the city of Cebu desires also a reservation for a market place, which has been provisionally granted.

It is probable that this estate hereafter will be self-supporting and should be offered for sale and the greater part of it sold during the coming year.

Binagbag.—A complete survey and computation of the parcels on this estate were secured and the estate offered for sale, but the tenants thereof have declined to purchase on the ground that the sale price was excessive, and only 35 lots were disposed of, these being rural lots which the occupants could not well afford to vacate. Of leases, 193 were executed on a basis of 5 per cent of the sale price. The remaining parcels, which were nearly all agricultural land, were neither leased nor sold, the tenants declaring that they would abandon same rather than pay the price at which offered, or lease on the basis of 5 per cent of the valuation. This bureau made no effort to dispossess the former occupants, pending the enactment of the amendment to the friar lands act extending the period for the payments of installments on purchase of friar lands. This act having been passed by the Legislature, it is believed that by offering the former occupants the land for sale on a basis of 25 annual payments practically all the estate may be disposed of. The estate will be registered in the court of land registration, and it is anticipated that when title is obtained, there will be little difficulty in finally disposing of the estate or in leasing it at a rate which will pay the interest and administrative charges.

Binan.—No computations having been made of the parcels surveyed on this estate, the planimeter areas have been used for the purpose of renewing leases, which has resulted in a material increase in both the area leased and the annual contracted rental. The rents received during the year were less than anticipated, owing to the fact that there are many parcels which have not yet been cultivated, and great difficulty is being experienced in collecting rents on

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this property. The estate is a good one and undoubtedly in the future it will all be leased or sold, but at the present time prospective tenants have not means sufficient to cultivate it. One tenant has taken advantage of the friar lands loan act for the purpose of purchasing machinery, and his land will no doubt be under cultivation during the coming year. The deficit, while somewhat less than for the previous year, does not show a satisfactory condition, but it is hoped to increase both the leased areas and the contracted rentals during the coming year.

The irrigation system has given satisfactory results and all the irrigated land is leased. It is estimated that the estate will be ready for sale some time in the latter part of the coming fiscal year.

Calamba.—The re-leasing of this estate on the basis of the areas obtained by the planimeter has been begun, with a resultant increase in the area leased and the rents contracted for. This estate shows a comparatively small area occupied, and it has been the endeavor of the bureau to increase the same by obtaining new tenants, and several new lessees have begun the cultivation of the estate, and with a view to assisting these tenants the bureau of agriculture has been requested to undertake steam plowing, and this bureau will endeavor to obtain the betterment of the roads leading thereto. The rentals due are being paid more promptly and with less opposition than is the case with other estates in this province, and aside from the fact that a small group of local agitators are apparently doing everything in their power to hinder the work of the agent and embarrass the government in its attempt to administer this estate, the conditions are more favorable at the date of the last report.

It will probably be a year before the actual areas can be computed from the parcel surveys and the estate offered for sale. Meanwhile every attempt will be made to increase the cultivated areas and obtain new tenants. All irrigated lands on the estate are leased, but the irrigation system needs to be extended, when it is believed that from 300 to 500 hectares additional may be placed under irrigation, but this means the reconstruction of the old works which had been abandoned many years ago, having been destroyed by floods. There is opportunity also for more extensive irrigation in the southern part of the estate, there apparently being abundant water. This matter will receive the consideration of the bureau by having engineers prepare plans and estimates for this project.

While the receipts from rents for this estate exceed those of former fiscal years, until the area under cultivation is increased there appears little indication that they will equal the charges for interest and administration.

Dampol.—The Dampol estate has been ready for sale for more than a year, and during the past year it has been registered in the court of land registration and a Torrens title obtained therefor.

During the last year the estate was again offered to the tenants, who declined to purchase on account of the excessive cost and declined to lease on a basis of 6 per cent of the appraised valuation, whereupon, with the approval of the secretary of the interior, the estate was offered to the tenants on a basis of 5 per cent of the same. Upon this latter basis 335 parcels were leased and 36 sold on a basis of 10 annual installments, and 2 were relinquished. At the time of the sale above referred to the majority of the tenants signified their willingness to purchase their land, provided the period during which payment for same might be made would be extended to twenty-five years, and in view of the amendment to the friar lands act it is anticipated that there will be no trouble in disposing of practically all of this estate within a very short time.

Guiguinto.—Leases in force thereon expire at the end of the fiscal year, when the entire estate should be re-leased upon a basis of planimeter areas, and the sale and final disposal of it within the fiscal year is practically assured. The plans, descriptions, and actual parcel areas are now in the hands of the attorney for the government for presentation to the court of land registration.

The greater part of the outstanding rents have been paid and it is believed that all will be prior to the date of sale. The income for the year has practically offset the expenses.

Imus.—The Imus estate, being one of the largest purchased by the government, will probably be one of the last to be sold, and it is anticipated that computed areas and the final plans and descriptions of the parcels will not be ready before the beginning of the calendar year 1910. Meanwhile, the re-leasing of the parcels has been begun, based on the planimeter areas, which will give an increased area leased and increased contracted rentals. A considerable number of new leases are being executed and an increased area under cultivation of between 10 and 15 per cent is reported.

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It has been necessary, in order to obtain lessees on the southern end of this estate, to offer special inducements, such as low rentals for the first two or three years, and it is understood that a steam plow is working there under contract between the bureau of agriculture and the tenants. How much has been accomplished has not been reported, but it is known that an increased area has been prepared for sugar planting.

The reports show an increase in rents over the previous year, but it will be several years before the income equals the expenses, including interest.

During the present year 6 tenants have availed themselves of the friar lands loan fund, securing funds for the purchase of animals to be used in connection with the cultivation of their lands, and it is expected that further loans will be made to tenants of this estate during the coming year.

The irrigation system has been somewhat improved during the year, but a new dam is necessary for the irrigation of a portion of the estate, close to the población of the town of Imus. Plans and specifications have been prepared and approved, and it is believed the work will be underway shortly under the direction of the director of public works. All the irrigated rice land on this estate is under cultivation and produces satisfactory crops, but some years must elapse before the sugar land is again occupied.

Isabela.—Little change has been made in the general condition of this estate since the last report. The tenants have paid their rents, but there are so few tenants and so little land occupied that either the estate must be sold to a corporation or an individual with sufficient funds to properly cultivate same, or a system of colonization resorted to in order to obtain an income from the estate sufficient to cover the interest and administrative charges.

The resident agency of the estate was discontinued during the past fiscal year and the provincial treasurer is acting as agent, although but little benefit can be accomplished in the securing of new tenants by this arrangement. The partially settled condition of this estate and the proximity of the Kalingas make the problem of securing new tenants a difficult one, although it is hoped to make some progress during the coming fiscal year.

Lolomboy.—This estate consists of 4 separate and distinct properties, which are in turn divided into a large number of small parcels, and in making the surveys this bureau was compelled to use an inexperienced surveyor, through the lack of others, with the result that a resurvey of a portion was necessary in order to satisfy the tenants. This was caused by the fact that the surveyor did not obtain his proper information as to the boundaries of the various small holdings, did not survey the different kinds of lands separately, and did not use good judgment, but endeavored to straighten lines between parcels which were bounded by more or less natural boundaries. Thus, complaint arose from the tenants which necessitated another survey party going over the former work. This has delayed the computation of the areas of the parcels, and while the field work has been completed, an enormous amount of computation is still necessary before the estate may be made ready for sale. Meanwhile, the areas of the parcels have been computed by the use of the planimeter and new leases are being made based upon these areas. The eventual result will be that nearly the entire estate will be leased before the end of the coming fiscal year, with an annual contracted rental which will probably be sufficient to offset the interest and administrative charges. While the report for the present fiscal year shows very little increase in the number of leases, the area leased, or of the annual contracted rentals, this was due to the fact that an equal area of old leases was canceled as soon as new ones were received. Some opposition has been experienced on the part of the tenants in connection with the renewing of the leases in accordance with the planimeter areas, although they are beginning to understand that they are merely leasing the actual area by them occupied.

During the year a considerable amount of work was done upon the irrigation system, which resulted in saving a rice crop on the estate, although the water necessary for proper irrigation can not be obtained with the present dam. Ditches have all been cleaned, head gates put in, and the water is now controlled by this bureau.

Malinta.—Almost the entire area of this property has been re-leased in accordance with planimeter areas during the present fiscal year, with the result that both the areas occupied and the annual rentals have been somewhat increased. The new rentals are being paid in a very satisfactory manner, and there are very few, if any, dissensions among the tenants or complaints against the administration.

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While the surveys have been completed, the final maps, descriptions, and computations of areas are still incomplete, and the registration of same in accordance with the provisions of the registration act can not be made for some months yet, though it is hoped that this property may be registered before the end of the coming fiscal year.

This estate is divided into 1,492 parcels, of which 1,397, consisting of 3,364 hectares, have been leased at a contracted annual rental of ₱17,367.12. There have not yet been leased 95 parcels, of which 57 are unoccupied and include an area of 83 hectares of practically worthless land, leaving only 38 lots which are occupied but have not yet been leased.

The annual interest charges on the purchase price of this estate at 4 per cent amount to ₱17,616.85. Thus it may be seen that the deficit on account of interest at the present time is only ₱249.73, with 95 parcels to be leased, and it is probable that this estate will become self-supporting during the coming year.

Matamo.—During the present fiscal year this property was again offered for sale, but the occupant of the same declined to purchase, taking, instead, a permanent lease for the period of 3 years, at the rate of 5 per cent of the valuation of the property.

Muntinlupa.—The favorable conditions of this property mentioned in the last annual report still obtain. A few additional leases have been executed covering heretofore unoccupied lands, and it has been reported that the cultivation of maguey, which was begun during the last fiscal year, has every appearance of being successful. This estate, being one of the least desirable of the friar estates purchased, still shows a deficit, but if the maguey cultivation succeeds, as may now be anticipated, it is believed that in 2 years it will be self-supporting.

The computation of the parcel areas will soon be completed, and the estate should be offered for sale before the end of the calendar year.

Naic.—An increased area leased and an increased amount of contracted annual rentals is shown on this estate, owing to the re-leasing on the planimeter areas. It is doubtful if it can be made ready for sale for several months, but in the meantime an effort is being made to induce new tenants to locate thereon, and an increased area of from 10 to 15 per cent has been placed under cultivation since the last report. The income of this estate exceeds that of the previous fiscal year, but owing to the unoccupied sugar lands a considerable deficit still exists. It is estimated that there are 400 or 500 hectares of land which could be placed under irrigation providing funds were available for the construction of a new irrigation system. The bureau of public works has been requested to prepare plans and estimate for such a system, although funds will not be available during the coming fiscal year for the construction thereof. The old irrigation systems have received some repairs and are in fair condition, and it is expected to still further increase the efficency of the present system during the coming year. It is also hoped to be able to sell some of the water from this irrigation system to adjoining owners.

Considerable opposition has been inspired by a small band of malcontents with considerable political strength, who have succeeded in enlisting a number of otherwise peaceful and contented tenants in opposing the agent of the estate in his efforts to protect the interests of the government. Thus the agent was arrested and rearrested, on what were apparently false charges, several times and compelled to put up heavy bonds to keep out of jail, which was the evident intent of those charging him with crime, who were the very parties against whom he originally filed charges for the theft of firewood. These cases are still pending before the court of first instance, but the opposition to his administration has apparently subsided, although the outcome of the case is of serious import to the administration of this estate. Very little real progress can be made by this bureau in the management of an estate as long as agitators create dissension among the tenants for their own personal gain, and only firm and prompt measures can prevent a serious reduction in revenues under such conditions, and in this case attorneys were employed and the agent of the estate given every assistance in order to put a stop to the cutting of firewood and bamboo on unleased portions of the estate.

Orion.—This estate has been prepared for sale, and complete descriptions and areas of the parcels have been referred to the government attorney for registration in the court of land registration. The work of selling this estate is progressing in a very satisfactory manner, and it is believed before the close of another month the entire occupied area will either be sold or leased. The

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income was sufficient to cover the cost of administration and interest, and hereafter it is believed that it will be self-supporting. It is further believed that the resident agency on this estate may soon be discontinued, thus reducing the administrative charges, as an agent may be sent there during the period in which annual installments are due, when he can make such necessary changes in the leases on the occupied lands and make such new leases on unoccupied areas as is possible. Only a small portion remains unoccupied, and it is not believed advisable to retain an office at this point solely for the purpose of obtaining new tenants therefor.

This estate is susceptible of irrigation, but inasmuch as the territory subject to irrigation will be sold, there is a question as to whether this matter would come under the friar lands or the general irrigation project for the islands. A petition has been received from the tenants urging the construction of such a system, and the matter will receive the consideration of this bureau during the coming year.

Piedad.—The Piedad estate has been re-leased on a basis of planimeter areas, with a great increase in the area leased and in the annual contracted rentals and collections, but has not yet entered the column of self-supporting estates, owing to the fact that a large area is yet unoccupied. Attempts have been made to obtain new tenants, with some degree of success, and several large tracts have been leased upon special inducements, viz, a reduction in rent for the first year or two in order to enable them to cultivate the land, which has been uncultivated for the last ten years. The estate is very near Manila, but the soil is not first class, and the approaches thereto have heretofore been in very bad condition. The opening of the new road to the headworks of the Manila waterworks has placed the estate within reach of Manila, and it is believed that during the coming year a large portion of the unoccupied lands will be leased for the purpose of securing, primarily, cultivation, although it will also increase the rentals.

It will be impossible to complete the computations of the parcel areas during the coming fiscal year, but it is believed that no hardship on the tenants will be occasioned thereby, although the rents have been paid in a satisfactory manner during the past year.

Some disagreement has arisen over the boundary line between this and the adjoining estate, which question, however, it is expected will be satisfactorily settled within the near future.

San Francisco de Malabon.—Nearly all of the leases expired during the year and were renewed on the basis of the planimeter areas, with a result of an increase in the leased area and in the annual contracted rentals. The area under cultivation has also materially increased during the year, and the receipts have exceeded the annual rental, owing to the fact that there were many delinquent tenants at the close of the last fiscal year. This was due to the fact that rice crops were held pending an increase in value, and the rents were suspended by this bureau until the tenants had sold their crops.

Considerable work has been done upon the irrigation system on this estate by the bureau of public works, a statement of which appears under the head of "Irrigation," and the volume of water available for irrigation has been diffused over larger areas and the same put under cultivation.

The tenants have so far declined to avail themselves of the friar lands loan fund for the cultivation of the sugar lands, although there are large tracts of uncultivated land.

The question of caiñgins on the estate has become of such importance that a ranger has been appointed whose duty it will be to endeavor to secure leases of those who desire to make them, with a view to obtaining permanency in such tenants, although heretofore it has been almost impossible to get any rent from such a class of occupants. There has been considerable discussion as to whether the planting of caiñgins on this estate was detrimental or not, but while it is believed that a caingin is detrimental, it is also believed that it is almost impossible to prevent them, and it is therefore proposed to recognize them in such a manner as will produce the best results, and instructions have therefore been issued to prevent caiñgins wherever possible, but if not possible, to make such collections as will reimburse the estate for the damage done.

San Jose de Mindoro.—There has been no change in the general conditions during the year. No local agency has been established, nor is there any indication that such will be necessary. The title to this estate has been decreed by the court of land registration and contract made with the Recoleto Order of Friars for the grazing of cattle thereon at a rate of ₱0.20 per head for all ani-

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mals over 2 years old, and the income therefrom approximates ₱2,400 per annum.

No solution has yet presented itself of the problem as to the ultimate disposal of this property. It therefore remains a losing investment to the government to the extent of the interest charges of practically ₱24,000 per annum. If the law limiting corporations to the ownership of not more than 1,024 hectares of agricultural land is ever amended, there may be a possibility of a sale of this estate; otherwise, the only solution would be its colonization, and until the other estates are placed upon a paying basis it would appear inadvisable to attempt colonization.

San Marcos.—This estate was sold during the year to the occupant thereof, according to the provisions of the friar lands act and its amendment, at a value of ₱14,140.14. The purchaser made immediate payment of the first annual installment, with interest. It is therefore believed that this property is finally disposed of and that the purchaser will be able to pay for the estate as the installments become due.

Santa Cruz de Malabon.—While the field work of the surveys on this estate has been completed, it has been impossible to obtain even the planimeter areas of the parcels thereof. The present leases in force are therefore based upon the declarations of the tenants. The present leases, however, will expire in the early part of the coming year, when the planimeter areas will be ready for use, and it is believed a large increase in the area and annual contracted rentals will be obtained.

The receipts, while slightly in excess of those of the previous year, are far below the amount necessary to cover the interest and administrative charges.

All the irrigated rice land is under cultivation and leased. Some repairs have been made to the irrigation system, but no new work has been undertaken.

More than a year must elapse before this estate is ready for sale, and meanwhile the releasing will be begun and an attempt made to lease the unoccupied sugar lands on the southern end of the estate.

Santa Maria de Pandi.—This estate was the last on which the field work of surveying was completed, and the planimeter areas are not as yet available for releasing purposes. Reports of the agents show that practically 90 per cent of this estate is occupied. This being the case, and only 40 per cent leased, it may be anticipated that during the coming year both the area leased and the annual contracted rentals will double. It is thickly populated, and there would appear no reason why during the coming year the income should not equal the expenses, including interest and administration.

A large amount of work on the irrigation system has been done by this bureau. This system is merely one for conserving the water in reservoirs, as there is no running water available. A special report on irrigation on this estate is included under the subject of "Irrigation."

Conditions at the present time are far more satisfactory than at the date of the last annual report.

It will be approximately a year before the parcel areas will have been computed and the estate may be offered for sale.

Santa Rosa.—The Santa Rosa estate shows a condition less favorable than at the close of the last fiscal year in the area leased, contracted rentals, and collections. This is due to several causes, mainly the fact that large areas have been held by former occupants with the hope that they might at some future time cultivate the land. They have failed to pay the rent or to increase the area under cultivation, and some have been compelled to abandon their holdings.

The computations on the parcel areas have been practically completed, and the estate has been classified for sale, and probably will be sold about the first of the next calendar year. Meanwhile new leases will be executed, based upon the actual areas, when it is believed that the actual area leased and the contracted rentals will be materially increased.

The area under cultivation has been increased during the year by about 10 per cent, principally on the sugar lands. This has been due to two causes: First, to the fact that the bureau of agriculture furnished and operated a steam plow upon this estate, which is mentioned under a separate heading; and, second, to the fact that several tenants have availed themselves of the provisions of the friar lands loan fund. One difficulty has been the fact that the tenants, recognizing the value of this land, have attempted to monopolize all the vacant tracts possible, with the hope that in the future some great benefit would inure thereby through their having secured the preference rights. During the coming year this matter will all be rectified, with a view to obtain-

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ing as much cultivation as possible, and those tenants who hold large tracts of uncultivated land will either be required to pay the rent therefor or to relinquish them. It is true that a majority of them leased the lands which they formerly occupied, and were they able to pay their rents promptly no reason would exist for their not being permitted to lease as large tracts as they should desire, but the preference right to lease and purchase carries with it the corresponding duty of paying rents when same fall due, and it is believed that unless some change occurs in the financial condition of these people during the coming year it will be necessary to deprive them, under the provisions of the friar lands act, of the lands they are holding and not cultivating on which they are not able to pay the rent.

Undoubtedly there will be some opposition on the part of the tenants to leasing the actual areas by them occupied on a basis of 5 per cent of the valuation, as it is the opinion of the bureau that they have underestimated the extent of their respective holdings and paid less rent than they should have paid in the past.

The question of friar lands loans on this estate is treated of in a separate paragraph.

Tala.—This estate, which is sparsely occupied and of poor quality, is still leased under the original temporary leases made by the bureau. The planimeter areas of the parcel survey have just been computed and new leases will be executed during the coming year, which should show a slightly increased area and an increased annual contracted rental. A few new leases have been executed during the year to bona fide occupants, but the great bulk of the estate has been contracted for to obtain cultivation, as stated in the paragraph "Other efforts to induce occupation and cultivation of friar estates." Thus the bureau has practically obtained a contract for the occupation and cultivation of the entire estate, and if the cultivation of the estate becomes an assured success, the question of its ultimate disposition has been solved.

Since the contract above referred to has been signed, a number of applications for land on this estate have been received, but whether in good faith or not is a question which will be investigated, but those applicants who have been and were at the time of its purchase by the government bona fide and actual occupants will be given an opportunity to lease, while newcomers will be treated in accordance with the terms of the contract for the occupation and cultivation of the vacant lands of this estate. While the deficit has been somewhat decreased during the year, a still further decrease may be anticipated during the coming fiscal year, although it is hardly believed that the estate will become self-supporting for several years to come.

Talisay-Minglanilla.—Owing to the agitation on this estate, it was considered advisable before the parcels had been surveyed to apply to the court of land registration for its registration. This was done, the case has been heard, and it is probable that the final decree will issue during July of the coming year. Although opposition was entered, it is believed the entire estate will be awarded to the government.

The original temporary leases were allowed to continue in force until the latter part of the year, when the planimeter areas were computed, and the re-leases are now being made in accordance therewith, which have resulted in a very largely increased area and annual contracted rentals, which will show on the reports for the coming year, and increased collections should result which will decrease the deficit. This estate, as a whole, is not good agricultural land, although fairly well cultivated. The rents have not been paid as promptly as could be desired, and until the title is perfected no attempt will be made to prosecute to recover rents, but it will be necessary in the near future to begin such proceedings and undoubtedly necessary to eject some of those occupants who have been holding adversely to the government. It may be possible that it will be offered for sale about the close of the coming fiscal year, although there is a large number of very small parcels upon this estate, which includes an area of 300 hectares, divided into over 1,300 parcels. When it is considered that this is agricultural land and not town lots, it may be seen what a tremendous amount of labor is necessary for calculating the actual areas of these parcels. An error in the boundary of this estate, made by the bureau of engineering when the original survey of the boundary was made, has been rectified, which, while increasing the area thereof, is of no great value to the government, but the correction was necessary to conform with the old Spanish title to the estate, and the former boundary was used in its registration in the court of land registration.

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PUBLIC LANDS.

HOMESTEADS.

[CHAPTER I.—Public land act.]

As may be noted in the tabulated statement attached,[a] the number of homestead applications received was 2,196, which fell below the number received during the fiscal year 1907 by 503. This is neither strange nor unexpected. As stated elsewhere in the report on free patent applications, the absence of public land inspectors in the field partially, at least, accounts for the decrease in the number of applications received. There is an apparent disposition of indifference among the natives relative to acquiring title to land. They seem to have the notion that as long as they are occupying a tract of land that is all that is expected of them, and that they will be permitted to remain regardless of whether they have title or not. The presence of an inspector informing them of the benefits and the necessity of acquiring a legal title, as shown by experience, results in many applications being filed which otherwise would never be received. Another reason for the decrease in applications is that there is a growing tendency among the owners of large haciendas to discourage the more ignorant from taking up land on their own account. The reports from inspectors indicate that large holders are becoming actually alarmed for fear that they will not be able to obtain laborers sufficient to keep their lands under cultivation. Large holders extend inducements to laborers by offering them a small share of the produce to cultivate certain areas. It is in cases of this sort where an inspector can do much good in not only counteracting the bad advice given by large holders, but also in proving to the laborer that he may work for years and have nothing to show for it, whereas he might spend the same amount of time and energy on a homestead and have absolute title to 16 hectares of land. Another matter which discourages homesteaders is the practice more or less prevalent of an individual producing some written document, together with plans, indicating that he owns vast areas of land. These documents and plans are often fraudulent. The plans are usually drawn in his own imagination and then submitted to some person who is handy with the pen and who can add all the embellishments and adornments necessary to make up a well-regulated plan. Armed with this plan he exhibits it to the more ignorant and with a wave of the hand informs them that he is the owner of a vast territory. Prospective homesteaders are discouraged and believe that there is no public land in existence.

There is a continued and growing tendency in homesteads, as well as in sales, to encroach upon land already occupied. There have been many contests growing out of this practice. It has been found that homesteads have been filed included in which will be a small tract of possibly 1 or 2 hectares already under cultivation. It seems to be the idea that since the larger part of the tract is not cultivated and probably public land, that the applicant will be permitted to obtain the whole tract and thus get the benefits of land already cleared and under cultivation.

There have been 95 investigations made of contested homestead applications, and in the great majority of these cases it was found that the protests were well founded and that conditions existed as above described. In one instance, the facts developed showed that 5 men had dug an irrigation ditch for the purpose of irrigating a tract of arid land, but for which none of them had made an application. It was shown that there was doubt in their minds as to whether the ditch would be a success, and for that reason they had withheld their application. Others who had been looking on and watching the progress of the canal, when the ditch was almost completed and it was known that water would run readily through it and in sufficient volume, immediately filed applications for the land which the canal diggers had in view. It did not seem fair that these people should be deprived of the fruits of their labors for the mere reason that others had filed prior applications, and the result was that the applications of those who had done no work on the ditch were promptly rejected.

In some of the investigations made of contests, it developed that the protests were without any reason and that the land actually applied for was several

[a] Omitted and filed in the Bureau of Insular Affairs, War Department. A plat (triangulation) of the Talisay-Minglanilla Estate has also been omitted.

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hundred meters from any occupied or cultivated land. The purpose of these protests was probably simple malice or to discourage those who had been laborers from acquiring land on their account.

The applications that are returned for correction are still numerous. On the average about one in every five received is returned because of some material defect. The chief difficulty is indefinite description, or applying for land in irregular shapes or attempting to secure a long narrow strip 1,000 or 1,600 meters in length. The officials who administer oaths are quite as often at fault as the applicants themselves. Many applications have been returned where neither the application nor the affidavit were signed, although the cercertificate of the officer who administered the oath indicated that this had been done. The name of the person making the affidavit was frequently omitted in the certificate and notaries public very often neglected to affix their seals.

The reports from inspectors indicate what has long been suspected, and that is, that homestead entrymen are not complying with the law relative to residence. In the 100 or more entries investigated it was shown that not more than 3 or 4 had their residence actually upon the land. It seems that these people can not rid themselves of the old custom of living in groups, and therefore it has been found that they have their residences in the barrios and cultivate the land either in person or through laborers. They can not seem to divest themselves of the idea that they are likely to be robbed or have their carabaos stolen unless they live in the barrios. If they could understand that where a number of them have homesteads adjoining and had their residences on the land, they would be quite as much protected as in the barrios, there would be less disregard of the law relative to residence.

The recently proposed amendment to the homestead law enacted by he Legislature is intended to relieve the entrymen in the particulars mentioned in that it provides that they shall reside upon the land for 2 years only instead of 5. If it is a fact that they now fail to comply with the law because of fear, it is difficult to see how the proposed amendment will remedy the difficulty. If they will not establish their residence on the land during the first year, it is not believed that they will reside there during the last 2 years.

In proposing the law referred to, the author of the bill probably had in mind the idea that he was making it easier for the applicant in the matter of the payment of the required fees. In the law as it now stands, the applicant is not obliged to pay the final ₱10 until he has made satisfactory proof, and if the same is not forthcoming the ₱10 will not be paid. Under the proposed amended law the applicant must pay the entire ₱20 whether he makes proof or not.

From time to time this office is in receipt of communications indicating that applications are being made in the names of persons who have no knowledge that they have been filed. A report from the bureau of forestry showed that in the case of 10 or 12 applications the applicants who had been requested to point out the land applied for by them to the forest inspector knew nothing about any land and declared that they had never signed any application. It was alleged in the report that certain individuals have been instrumental in having these applications made. These cases are now under investigation by a public-land inspector and if sufficient evidence can be gathered prosecutions will follow.

Along this same line is another serious matter, and that is alleged surveys for homestead applicants. Large fees are charged for this work, which can be of no possible value. In one case the local land officer reported that a large number of surveys had been made for homestead purposes and that the individual who made the surveys was carried about in a hammock while executing the field work. This case is now under investigation.

During the year the question of timber rights of homestead entrymen was raised by the bureau of forestry, and in an opinion the attorney-general stated in substance that timber on a homestead claim is still subject to the jurisdiction of the bureau of forestry. This office took exception to the ruling, and the question is again in the attorney-general's office for a review of his former opinion.

There has been a large increase in entries allowed. During the year 1,459 applications have been approved, which is almost double the entries allowed for the 3 previous years. The fees received during the year aggregated ₱14,540, of which ₱140 were returned to the applicants. In the matter of refunding fees the practice in the United States has been followed, which is, that no fee is refunded except upon proof that the government can not give title to

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the land applied for. Several complaints have reached this office indicating that fees have been collected and not accounted for to this office. In one instance an ex-municipal treasurer collected ₱90. The provincial treasurer received some information in this case and began an investigation. The person to whom the money was paid received warning in time to forward the amount to this office. The money was paid at the Manila office by some one in person, and as no information had been received in the matter the name of the person making the payment was not obtained. Another case of the fraudulent retention of fees is now under investigation. There have been other complaints by homstead applicants, but they either do not know or will not furnish the names of persons to whom they paid the fees.

The following tabulated statements show the number and status of applications received during the year, and the number and status of applications received since the promulgation of the public land act.[a]

SALES.

[CHAPTER II.—Public land act.]

During the fiscal year 51 sales applications were received, covering an area of 583 hectares, bringing the total of sales applications received since the promulgation of the public lands act of June 30, 1908, up to 219, with an area of 5,564 hectares. Of the 51 applications received during the fiscal year, 6 sales were made, covering 76 hectares, for which ₱1,249.24 was realized. Of the total number of applications received since the promulgation of the public land act, 105, covering 1,999 hectares, have been rejected, canceled, and withdrawn, of which 9, with an area of 109 hectares, were for the past fiscal year.

Applications to purchase small parcels continue to be received. These applications range from 5 hectares to as small as 16 centares. As was stated in last year's report, these small parcels can not be sold at a reasonable value per hectare without incurring loss to the government. It is manifestly a poor business proposition to make a sale simply for the sake of making it where the government stands to lose anywhere from ₱40 to ₱80. In last year's report it was shown that the survey of homesteads and the necessary office work entailed would cost the government about ₱50 for each homestead, a clear loss of ₱30, after deducting the entry fee of ₱20 received. It was shown that free patents would cost the government about ₱30 each, with no receipts. It is manifestly necessary, therefore, that at least part of this should be recovered on sales and leases, and that these should be made at a profit.

The practice has been inaugurated in cases where applications to purchase ranged around 1, 2, or 3 hectares to inform the applicant that the land applied for has been appraised at a certain figure, and that figure is placed at an amount that is calculated will at least cover the expenses in connection with the sale if made. The sale of a small parcel, including advertising charges, office work, and survey, will not fall below ₱80. In an application to purchase 1 hectare the appraisement is fixed at ₱100, and in an application for a larger or smaller area the appraisement is fixed at a price per hectare proportionate to the above amount. This practice is probably an arbitrary one, but it seems the only way out of the difficulty. An applicant is not always awed at a large price, however.

In one instance an application was made for something over 2 hectares. The applicant was informed that the price per hectare would be ₱45. To this he readily agreed, and this fact in itself seemed to be a suspicious circumstance. Before the land was advertised a protest was received, and on investigation it was shown that the greater part of the land applied for was planted in maguey and the growth was well underway. This maguey was planted by another, and the applicant was thus attempting to reap the benefits of another's labor, and therefore his willingness to pay the price mentioned.

Provincial treasurers, as a rule, are requested to make appraisements of land sold or leased, but if the land applied for is situated at some distance from the capital it becomes necessary for the treasurer to incur traveling expenses in making the appraisement. If the land is not sold, there is a clear loss, and it was thought that the arbitrary rule above noted should be adopted, as in that case there is no expense to the government if the sale is not made. The method of having the appraisements made by local land officers is in any case not alto-

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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gther satisfactory. As is well known, these officials are burdened with work, and it therefore becomes necessary for them to send a request for appraisement to a municipal treasurer if the land is situated two or three days' journey from the capital. The experience has been that the municipal treasurers have little idea of the value of the land. They have made appraisements as high as ₱100 per hectare on an area of 16 hectares, but on proper investigation it has been found that the land did not exceed the value of ₱20. Unless the land is of exceedingly fine quality and well situated, it is impossible to make sales in large tracts at ₱75 or ₱100 per hectare. There seems to be a belief among the Filipinos that all land will be sold at ₱10 per hectare, and in several instances applications have been received, accompanied by the entire amount which the area applied for would bring at ₱10 per hectare. During the year there have been several requests to cancel homestead entries and to purchase the land on which homestead entry had already been allowed. These requests have always been granted, since the applicants stated that it would be impossible to comply with the requirements of the homestead law. During the year there have been two sales to companies composed of Filipinos. One of these sales was for the maximum amount of 1,024 hectares and the other for 128.

It is desired to reiterate the recommendation of last year that individuals or corporations be permitted to purchase as many contiguous tracts of land as they may desire at different times, provided the total area does not exceed the legal allowance. In this way the person or corporation with small resources would be able to purchase land and add thereto as circumstances permitted, without the necessity of encumbering themselves with the purchase price of the maximum allowance.

It is a fact that to date the greatest improvements made on land purchased or leased from the government have been made by such persons or corporations with limited resources, and, in view of this experience, it is thought that this recommendation is justified.

The following is a detailed statement of sales applications for the fiscal year 1908, and for the total period since the promulgation of the public land act.[a]

LEASES.

[CHAPTER III.—Public land act.]

The leasing provisions of the public land act are receiving more attention than has been shown in former years, as indicated by the tabulated statements attached hereto.[a] There have been 56 applications received for the fiscal year, as against 22 for the 3 years previous. Interest in leases centers round the Moro Province, as shown from the fact that out of the 56 applications received 46 are from the Island of Mindanao. Of these applications 22 from the Moro Province were filed by natives, and the areas applied for ranged from 16 to 100 hectares. Of the applications received 8 are for the maximum of 1,024 hectares, and these applications were filed by corporations composed of Americans. There are other companies and individuals who have located large tracts of land in the Moro Province for which applications have not yet been filed. Applications for surveys have, however, been received, and their applications to lease will soon follow.

As was stated in last year's report, settlers in the Davao district have found that 1,024 hectares of land is a much larger area than they had calculated. The result has been that the surveys on applications for 1,024 hectares show that the actual area included within their boundary mark ranged around 700 or 800 hectares. There seems to be no further anxiety among the settlers as to the extension of Chapter II of the public land act, and it is believed they are satisfied with the explanation sent out from this office and set forth in last year's report. Convinced that they will be protected in the improvements they have made, and that they will be on a footing with other bidders should they desire to purchase their holdings if Chapter II is finally extended to the Davao district, there seems to be no reason why they should not feel absolute safety in making improvements as rapidly as their capital permits.

There has been an occasional inquiry from persons outside of the Davao district as to when the sales chapter will be extended to Davao, and the reply thereto has always been that it is a matter entirely in the hands of the commis-

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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sion, and that this office has no information as to when this extension may possibly be made. The Davao district offers exceptional advantages for the cultivation of hemp, cocoanuts, and rubber, is growing to be more or less known in the States, and many inquiries have been received and circulars requested.

There have been nine surveys completed in the Moro Province, and as soon as appraisements of the land can be made leases will be executed. There has been one survey in Mindoro, and lease for this tract will soon be accomplished. Another survey of a thousand-hectare tract is now in progress in Nueva Ecija.

There have been some objections by applicants to the cost of surveys, but the heavy expenses have been largely the fault of the applicants themselves in not supplying sufficient laborers, or in not having their lines cut through the brush so that work might proceed without delay.

There have been three investigations of contested cases. One of these was between applicants for lease and was settled to the satisfaction of all persons concerned. In the two other cases claims were made by natives who pretended to be prior occupants. These two cases have not yet been finally settled. The attention of this office has been directed to the fact that Chinese and Japanese in the Davao district are attempting to secure public lands through marriages with native women. Two applications have been filed in this manner and, through information from the local land officer, were promptly rejected.

An official of the bureau will visit the Moro Province during August for the purpose of appraising the lease values of all lands for which applications have been made, and the execution of these leases will probably follow during the coming fiscal year. There has been no extension of the public land laws to the Moro Province other than those in force at the time the last annual report was rendered.

A detailed statement of lease operations is attached hereto.[a]

FREE PATENTS TO NATIVE SETTLERS.

[CHAPTER IV.—Public land act.]

It will be noted that there was a large decrease in the number of applications received during the fiscal year just closed as compared with last year.[b] There were 2,045 applications, covering 9,836 hectares, as compared with 8,607 applications received during the previous year. It is believed that this large decrease can be accounted for in the manner following:

Since the early part of August, 1907, there has been but one public land inspector, and he has been in the field but a small portion of the time. Up to June of this year it had not been possible to secure men qualified by experience and temperament to place in the position of inspector. One inspector who was in the field during a few months of the last fiscal year secured upward of 3,000 applications. Another reason for the decrease noted is that it is supposed that the large majority of those who were entitled to the benefits of Chapter IV have filed their applications, since it was expected that the benefits of Chapter IV would cease with the calendar year 1906. It is probable, however, that there will be as large a receipt of applications toward the close of the present year as there was at the close of 1906. Another reason noted by inspectors in the field is that many persons do not know that the law has been extended. It has been no fault of this office that this information is not thoroughly circulated. Even during the past fiscal year more than 21,000 free patent circulars have been distributed throughout the provinces. All of them contained a note printed in red ink, in the same dialect as the circular, calling attention to the extension of the law. During the year over 100 investigations have been made of contested applications. In 90 of these it was found that the applications had been made for land on private haciendas. In 16 cases it was found that the tracts applied for are within a tract claimed by another, and for which application had been made in the court of land registration. In the majority of cases investigated it was found that the applicants had either been tenants or laborers for a long term of years on the haciendas where they attempted to secure patents. These attempts may be attributed to ignorance of the law, deliberate fraud, and outside influence for mercenary reasons. While no specific instances have come to the notice of the office, it is known

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

[b] This table has been omitted and filed in the Bureau of Insular Affairs, War Department.

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that in free patents, as well as in other applications for public lands, persons of some influence and intelligence charge large fees for filling out applications, and, of course, it is a matter of indifference to them where the land is or to whom it belongs.

It will be noted from the tabulated statement attached [a] that almost one-tenth of the applications received have been rejected. It is safe to say that 99 per cent of those rejected were because of noncompliance with the law relative to occupation and cultivation. Many seem to have the idea that the government is donating 16 hectares to any person who cares to apply for it. In many instances applicants have probably confused the homestead and free patent provisions. Numerous applications have been received which show that according to the statements made therein the applicant began the cultivation of the land some years before he was born. Such statements are possibly not so much the fault of the applicant as of the persons who fill in the applications, because it is very well known that the more ignorant class of people have no idea of dates. Time is fixed by the happening of some notable event, probably only notable within the municipality, but it is their manner of calculating time. Where applications are received containing statements which can not by any physical possibility be true, the applicants are always given an opportunity to set themselves straight, and the practice has been to require affidavits correcting, if possible, the errors as pointed out to them.

There have been some attempts of natives of China and Spain to secure the benefits of Chapter IV, but these have always been detected and the applications promptly rejected.

Of the total number of applications received, 645 have been surveyed, but the computations have not yet been made.

TOWN SITES.

[Chapter V.—Public land act.]

Since the close of the last fiscal year the Sibul Springs town site has been surveyed and the reservation made by resolution of the Philippine Commission. It is composed largely of small parcels of private land, and until the titles of the claimants have been passed upon by the court of land registration no further action can be taken looking toward its improvement.

The boundary lines have been run and surveys completed of Dansalan, Parang, and Cotabato, proposed town sites in the Moro Province. Questions have arisen relative to titles therein, and the assistant director of lands will in the near future proceed to Davao for the purpose of making investigations, and if possible will arrange so that all persons interested will be satisfied with whatever future action may be taken. In the proposed town site of Dansalan it was found that certain persons had purchased the rights of the Moro settlers and believed that by these purchases they had acquired vested rights. The question came to this office through a letter from the surveyor, and a reply to his statement of facts was made to the effect that the public-land act had not been extended to that portion of the Moro Province, except Chapter VI; that subdivision 6 of that chapter was specially reserved so that no rights could accrue through mere occupation; and that the persons who purchased from the Moros acquired no better title than the Moros had, and the Moros had none. The ruling of this bureau was sustained by the secretary of the interior and also by the attorney for the Moro Province. It was suggested, however, by General Bliss, and concurred in by the attorney for the Moro Province, that the Commission should take some special action whereby the claims of the Moros would be recognized.

The field work on the Malabang and Olongapo town sites has been completed, and work is now in progress on the plans. The survey of the proposed town site of Davao is now in progress and will be completed in the near future. Nothing has been done in the town site of Jolo.

Since the last report two sales have been held of lots in the Baguio reservation—one on January 6 at Manila and the other on April 15 at Baguio. At these two sales 44 lots were sold, and the prices per square meter ranged from a minimum of 4 centavos to a maximum of 15½ centavos. It will be seen that the minimum sale price per square meter at these sales was 2 centavos above the minimum at any previous sale and the maximum 2½ centavos above the maximum at any former sale. The survey of a hospital site has been com-

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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pleted, and there is now in progress that of about 30 lots for a Filipino residence section. The total receipts from the sale of lots in the Baguio town site amount to ₱33,369.13. On lots sold during last year for religious purposes there is a balance due, principal and interest, of ₱7,073.96. A diligent effort has been made to collect this amount, and it is hoped that it will be fully paid within the next 60 days. Of patents 209 have been issued, signed by the governor-general, and forwarded to the registrar of deeds of Benguet for registration.

The following tabulated statements show the work in detail relative to town sites reserved and those proposed: [a]

UNPERFECTED TITLES.

[CHAPTER VI.—Public land act.]

During the fiscal year there were received 384 notices from the court of land registration relative to cases in which applicants had requested the benefits of Chapter VI of the public land act. After investigation, the attorney-general was requested to enter opposition in 70 and appearance in 36. There are 12 still pending examination, and on the balance of 266 no action was taken by this bureau, either on account of the parcels being small or applicant having sufficiently justified his claim to the benefits of said chapter.

The opinion of this bureau expressed in the last annual report that large areas of land were being lost to the government through a too liberal interpretation of this chapter of the public land act, has been confirmed during the last year. It was certainly not the intention of the promotors of Act No. 926 that any such interpretation be given the law. Immediately this bureau makes any opposition in any of these cases, the property owners make complaints that the government does not wish to permit claimants to register their titles to lands which they own. Prior to the enactment of Act No. 926, it was the duty of the attorney-general to enter all opposition in the court on behalf of the insular government, and his policy was severely condemned by property owners and his conduct brought forth unjust complaints. After the enactment of Act No. 926, it was the duty of this bureau to pass upon all cases in which said act was involved, and the criticism has been transferred accordingly.

There are only two avenues of escape from this criticism; either the government must withdraw all opposition and allow petitioners to register all that they claim, or Act No. 926 should be so amended that cultivation be made a requisite to the perfection of title under Chapter VI. The latter course was the one recommended by this bureau in the last report, and the recommendation is here repeated.

It is not believed that it was the intention of Congress or of the Philippine Commission to allow persons to register, under that chapter, large areas of land, the larger part of which has never served the applicants or anyone else any useful purpose. It lends little stimulus to the agricultural industry to find large tracts of fertile soil lying idle, and which has lain idle for many years, although claimed by private ownership. It is discouraging to the people who desire to enter into farming on a small scale to find large areas of land belonging to private individuals yielding no fruits to the alleged owners. Were cultivation made a requisite to registration, it would instil some enthusiasm into the very large number of persons who desire to make farming a useful industry. Under Chapter IV, relative to free patents, a claimant can only acquire such land as he or his ancestor has actually cultivated. It seems unfair that large holders should be given benefits which are denied small proprietors.

One of the great evils complained of in last year's report, viz, the acceptance by the court of land registration of surveys made by unqualified surveyors, has been remedied by legislation contained in Act No. 1875 of the Philippine Legislature. This act provides that after July 1, 1908, all private surveyors who have passed the necessary examination to prove their qualifications must send their field notes, computations, and plans to the bureau of lands for verification. In this way the necessity for surveying properties under the provisions of section 66, where the applications are presented after July 1, 1908, will be obviated. However, there were pending on June 30 in the court of land registration approximately 1,400 cases, the majority of which will have to be surveyed under the provisions of section 66, and thus the government will be put to a great expense for these surveys during the next two years.

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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On account of other provisions of Act No. 1875, eliminating certain fees of the court of land registration, there will undoubtedly be an increase in the number of surveys under section 58. However, as the reduction of fees is more beneficial to the large property owner, it is thought that the increase will be principally confined to holdings of large areas. Act No. 1875 is of no advantage to the holder of property valued at less than ₱200; on the contrary, it has increased the expense of registration for such properties. Under the law as it existed prior to the enactment of Act No. 1875, the total fee for properties of less than ₱200 in value was ₱10, for which the government stood all publication charges. As the law now stands, the ₱10 fee is abolished, but the applicant is required to pay the cost of publication, which, according to advice from the clerk of the court of land registration, amounts, approximately, to ₱15 in each case. The expense to the small property owner has, therefore, been increased practically 50 per cent. It is suggested that this matter be taken up at the next session of the Legislature, with a view to legislation which will exempt small property owners from payment of publication fees and thus encourage them to register their titles.

During the year there has been a decision of the court of land registration, confirmed by the supreme court, holding that fish ponds are agricultural lands within the meaning of the act of Congress and Chapter VI of the public-land act. This decision not only applies to fish ponds, but by implication to nipa swamps, artificial salt beds, and overflowed lands which are covered with a growth of brush useful for firewood. The supreme court arrived at its decision through the fact that the act of Congress only provides for the disposition of mineral, forest, and agricultural lands; therefore fish ponds, being neither forest nor mineral, must of necessity be agricultural lands. The tenor of this decision leads one to the belief that the court arrived at such decision rather reluctantly, but was obliged to make such a finding in order that the public-land act would not be a nullity. If fish ponds and swamp lands are agricultural lands, it follows as a matter of course that they may be disposed of under Chapters I, II, III, and IV of the public-land act. It is believed that legislation should be enacted whereby lands of the character mentioned could be disposed of without giving so much elasticity to the public-land act. Article 103 of the law of waters provides that where marshy places belong to the state the government shall see that they are drained and sanitated so as to increase the lands under cultivation in the country. The matter of draining the large area of swamp lands in the United States has recently received the attention of Congress, with the end in view of increasing the agricultural area and at the same time making it possible for lands of this character to serve a useful purpose, and it may be that something can be done in these islands whereby swamp and marsh lands may not only be disposed of with profit to the government, but also be made to yield greater returns than they now do.

Sections 58 and 66.—On account of termination of surveys on the friar-land haciendas, it has been possible to place a greater number of men at work under the provisions of these sections, and as a consequence much has been accomplished. During the period covered by this report, there were 172 surveys, covering 234 parcels of land, executed under the provisions of section 58, at a cost of ₱10,455.61. The total area of these surveys is 2,477 hectares, making the approximate cost of survey per hectare, ₱4.27. Comparing these figures with those for the fiscal year 1907, it will be noted that the work done under the provisions of section 58 during the fiscal year 1908 was more than three times that executed during 1907. There were 145 surveys, covering 227 parcels, with an area of 9,330 hectares, surveyed under the provisions of section 66, the total cost of such surveys being ₱21,212.99.

RECLAIMED LAND, FORESHORE, AND LANDS UNDER WATER.

[Act No. 1654.]

The policy of the insular government to foster trade in every possible way and to facilitate the handling of the immense quantity of merchandise in interisland traffic led to the enactment of the foreshore law. The act has been in effect but little more than a year and is therefore probably not thoroughly understood, and possibly many are not familiar with its existence. These facts alone undoubtedly account for the small number of applications received during the fiscal year. Various informal applications have been received and are under consideration.

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A survey of the area filled in Manila Bay is progressing, and this land should be offered for lease during the coming year. A survey has also been ordered for the Cebu reclamation, but has been stopped pending the location of the custom-house and railroad right of way. The records show that authority to make this survey was requested and approved in September, 1907. Preparations were being made to send a surveyor to Cebu when the collector of customs for Cebu made objections to the site selected by the consulting architect for the new custom-house, and the governor-general suggested that proceedings be suspended pending further investigation. It also developed that the supervising railway expert had not definitely decided on the right of way for the railroad. Until the consulting architect and the collector of customs for Cebu agree upon the site for the new custom-house, and the supervising railway expert indicates the right of way for the railroad, the work of subdividing this reclaimed area can not be made. This bureau has several times indicated that it stands ready to begin work immediately upon the settlement of the questions herein outlined.

INSULAR GOVERNMENT PROPERTY.

The two leases executed for property belonging to the insular government, and for which this bureau collects rents, include the land occupied by the building belonging to the telephone and telegraph company and that on Calle Muelle de la Reina formerly occupied by the assistant director of navigation.

It seems desirable that the insular government should have registered titles to property belonging to it, and with that end in view several surveys have been made. At an early date the attorney-general will be requested to file petitions in the court of land registration on behalf of the insular government for titles to the following properties:

A lot in Malabon, Rizal Province, known as the "Fabrica de Princessa."

An experimental farm at Iloilo.

A coal yard located on Calle Muelle de la Reina, Manila.

A small lot in Paco.

A large tract of land situated in Bontoc, Province of Lepanto-Bontoc.

As time permits, surveys will be made of all other properties belonging to the insular government and registration will be requested.

MINERAL AND MINING CLAIMS ON PUBLIC LANDS UNDER THE MINERAL LAW OF THE PHILIPPINE ISLANDS.

Coal claims.—The matter of securing title to coal lands has received little attention during the past year. Many declarations of location have been filed, but a great number of these are merely relocations of former claims by different locators, but in fact probably for the benefit of the original ones. In the better known coal districts the field is kept pretty well covered by declarations of locations, many of these probably in the hope that the claims may be sold at a good profit. In many cases, however, the reasons locators do not perfect their titles are probably legitimate ones. Most of the coal fields containing the better quality of coal are found near available harbors, and the price, therefore, must be ₱100 per hectare. Ready cash to the extent of several thousand pesos can not always be had at the time it is desired, and this has probably prevented many persons from making applications for patent whose intentions have been honest. One reason why more applications for patent have not been received is possibly insufficient time for development work. Unless there is plenty of ready cash available, little can be done in one year toward proving the commercial worth of the claim. Possibly if the recommendation that has gone forth to Washington for the amendment of the coal law, allowing locators 3 years within which to perfect their claims and secure patent, receives favorable consideration, there will be more activity among them in securing patents to their claims. As proof of the fact that locators have not been able to secure the money to pay for their claims, 21 have been surveyed during the past fiscal year and allowed to lapse. Another reason why there is so little activity in purchasing coal lands is the fact that the quality of the coal in the Philippine Islands has not yet been definitely determined. Until its commercial value is established and known it can hardly be expected that the coal lands will be developed and patented. Until Philippine coal can take its place alongside Australian and other good qualities of coal and sell in the markets at at least a proportionate price, investors will continue to be somewhat careful in putting money in coal lands. However, the companies operating near the towns of Danao and Compostela, who succeeded to the rights of some old Spanish concessions, have

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shown their faith in the Philippine coal by executing, or agreeing to execute, a contract with the insular government by which they will be obliged to mine a certain amount of coal each day, or in default of mining the amount stipulated to pay the government a certain sum for each ton which they fail to produce.

Mining claims other than coal.—There has been a notable activity in the mining industry during the past year, and the outlook for profitable mining is more encouraging than it has been at any time since American occupation. With the increasing interest, the better showing of minerals, and with several claims patented, it will not be so difficult to obtain capital as it has been in the past. So long, however, as section 33 of the act of Congress of July 1, 1902, prohibiting the location of more than one claim on the same vein or lode by the same person or corporation, and section 75, prohibiting any member of a corporation engaged in mining and any corporation organized for any purpose except irrigation from being in any wise interested in any other corporation engaged in mining, are in effect capital is bound to be more or less timid in venturing into any mining project in the islands. It is a fact too well known to be repeated here that the most active and substantial business men are largely interested in corporate interests, and it is to these men that we must look for the development of the resources of any country. Much less need it here be repeated that in mining, possibly more than in any other industry, ready capital is absolutely necessary to do the work required to develop the commercial value of the claims. From an experience of many years it is apparent that those Filipinos who have available cash will not turn it toward the development of the mineral resources of the country. Until American occupation there was not, with the possible exception of one or two claims in Camarines, a mine worthy of the name. Filipinos did not then and do not now understand any but the most primitive mining methods. With American capital largely shut out through the provisions of sections 33 and 75, and with the indifference of Filipino capital, the best at this time can not be hoped for the mining industry of the islands. With the repeated recommendations for a modification of these provisions, mining men have faith that these recommendations will not go unheeded, and their faith is shown in the fact that there has been during the past year enthusiastic activity in prospecting and development work in the several provinces where minerals have been found in quantities to warrant some expenditure of money. The greatest interest is probably centered around Benguet, although Masbate, Camarines, and Lepanto-Bontoc have been close rivals. Recent reports also indicate that there is renewed activity in the placer-mining regions of Mindoro. Gold is receiving the largest share of attention and is found in almost every province. There is, however, a varied assortment of mineral locations, and it is noted that one mine has been located and declared to be valuable for rubies. There has been considerable interest shown in the copper regions of Lepanto-Bontoc, and one copper claim has been patented. According to a recent report of the chief of the division of geology and mines, copper ranks next to gold in importance as a natural asset of the Philippines. These copper deposits have recently received the attention of representatives of a large mining syndicate, and if satisfactory terms can be arranged between the holders of these claims and the syndicate it is probable that these copper deposits will in the very near future be thoroughly developed.

There has been a recent revival of interest in old Spanish gold concessions in the Camarines and in the iron regions of Angat, Bulacan, where there were also some concessions during the Spanish régime. The owners of the gold concessions have signified their willingness to enter into a contract with the government whereby they will perform a certain amount of work each year on their claims, and the iron concessionaires have also indicated their willingness to turn out a certain number of plow points.

The Benguet Mining Association has presented a request for an amendment to the mining law, as follows:

1. Providing for the sinking of a discovery shaft 10 feet deep within ninety days after the location of any mining claim.

2. Providing that no relocation shall be made by the original locator, his agent, associate, or trustee, until ten days after the expiration of the period fixed for the performance of annual assessment work.

3. Providing for a right of way for ditches, flumes, tramways, pack trails, or wagon roads over lands of any other person when such right of way is to be used for mining purposes.

4. Providing that any junior locator's claim shall be subject to the right of a senior locator to dump gravel, earth, tailings, etc., upon such junior locator's

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claim in the same manner that they were discharged at the time the junior location was made.

5. Providing that miners in any locality may establish mining districts and make rules and regulations for the government of such districts.

In addition to the foregoing there is a request for legislation providing punishments for destroying boundary marks and notices used to designate any mining claim; for the purchase of any ore or mine products knowing the same to have been stolen; for the theft of any ore from a mining claim and for "salting" mines; or for knowingly giving out false statements for the purpose of selling any claim.

An act has been prepared covering these subjects and will be forwarded for your consideration soon, together with such criticisms and recommendations as to this bureau seem best for the public good.

Owing to the fact that the majority of location notices have been found to be defective, this office has deemed it advisable to prepare and have printed correct forms for this purpose, and a supply of them will be placed with the mining recorders of the provinces where the mining industry has developed.

In the United States such forms may be had of any stationer in the mining districts at a nominal cost, but the demand for them has not been sufficient to warrant any merchant here in keeping a supply on hand. It is not believed that this bureau would be justified in making a charge for these forms in view of the fact that receipts from sales would probably not cover the expense in keeping the necessary accounts.

During the year five patents for lode gold claims have been issued and one patent for a placer copper claim. The receipts from the sale of these claims amounted to ₱1,047.27.

There have been advertised and are now ready for patent 28 other lode claims containing gold, and 5 placer claims, and 14 additional claims are now ready to be advertised. There have also been surveyed 3 more claims, and it is probable that applications for patent will soon be made therefor. The number of claims that have been patented and those pending patent, and the formation of mining corporations, the importation of modern stamp mills and dredgers, the presence recently of mining experts and representatives of foreign mining syndicates, and the constantly increasing development that is being executed all point to a sound belief in the mineral wealth of the islands.

This report can not be properly closed without some comments relative to the office of mining recorder. The patience of this office is all but exhausted relative to most of the officials who perform the duties of that office. If there ever was any doubt that the officials who were formerly and are now performing, or attempting to perform, the duties of mining recorder were and are unsatisfactory, all these doubts were swept away upon an examination of the mining records of Benguet Province as these records were found prior to the time that the present mining recorder of that province was appointed. A number of mining registers were kept and a declaration of location would just as likely be found in the book of transfers as in that where it should properly be found. Notices were not accurately copied, and in one instance part of a location notice was found on one page and the remainder somewhere else in the book. In the general mix up it is doubtful whether the present mining recorder has the records entirely straight at this time, although he has spent a good deal of time in the attempt. In Masbate it was found that the records were all dumped into an aparador, and it required much time and trouble to find a desired record, if, indeed, it were found at all.

All notices of applications for patent have been prepared in this office, although this duty properly belongs to the mining recorder. The great majority, and it may be said all, of the mining business thus far has been in the English language, and therefore mining recorders are not altogether responsible for some of their errors. The manner in which they keep their records, however, shows a neglect that is at once discreditable and without excuse.

By reviewing the reports of this bureau for past years it will be noted that there have been complaints every year of the tardiness with which mining recorders furnish this office reports of the business transacted during the fiscal year. The annual report of this bureau for 1904 is incomplete for the reason that several of the mining recorders failed to furnish the required data. Last year an appeal was made to the executive secretary to require mining recorders in certain of the provinces to send in their reports. The annual report of this bureau has always been delayed on account of these officials. For the present year two letters and one telegram were sent to a number of the mining recorders before they would make even a reply. The excuses offered for failure

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to comply with the requests from this office are trivial and utterly unworthy of any consideration. In the majority of these cases no transactions were had during the year, and it would have been less than five minutes' work to make such a statement and forward it to this office. In two or three instances reports were received about the middle of June, in which it was solemnly declared that the report contained a correct statement of all mining claims filed between July 1, 1907, and June 30, 1908. The foregoing shows not only incompetence, but a sheer and wanton disregard of the requests of this office. There is no possible excuse for unbusinesslike methods of this character, and it is to be hoped that some remedy will be found. The act prepared by this bureau providing that provincial treasurers should perform the duties of mining recorders for some reason failed to receive the approval of the assembly. It is a matter which merits serious consideration, and it is recommended that if provincial treasurers can not be appointed to perform these duties, at least competent officials be appointed in those provinces where mining has received any considerable attention, except in Benguet and Lepanto-Bontoc, where the present mining recorders are performing their duties in an entirely satisfactory manner.

The following statements show the mineral and mining claims filed in the Philippine Islands, not only for the fiscal year, but also for the period since the application of the mining laws to the Philippine Islands:

Detailed statement covering coal entries filed under the provisions of the coal-land law, Act No. 1128, during the period from July 1, 1907, to and including June 30, 1908, showing the status of same June 30, 1908.

Province.	Entries filed.				Canceled or withdrawn.				Action pending.				Patents issued.				Amount received.
	Area.				Area.				Area.				Area.				
	Number.	Hectares.	Ares.	Centares.	Number.	Hectares.	Ares.	Centares.	Number.	Hectares.	Ares.	Centares.	Number.	Hectares.	Ares.	Centares.	
Albay	33	1,736	....	....	....	....	....	....	33	1,736	....	....	....	....	....	....	.....
Cebu	33	2,112	....	....	....	....	....	....	33	2,112	....	....	....	....	....	....	.....
Mindoro	14	861	84	20	1	29	34	20	13	832	....	....	....	....	....	....	.....
Sorsogon (Masbate)	3	210	....	....	....	....	....	....	3	210	....	....	....	....	....	....	.....
Tayabas	7	448	....	....	....	....	....	....	7	448	....	....	....	....	....	....	.....
Total	90	5,367	34	20	1	29	34	20	89	5,338	....	....	....	....	....	....	.....

Detailed statement covering coal entries filed under the provisions of the coal-land law, Act No. 1128, since its enactment, April 28, 1904, to and including June 30, 1908, showing the status of same June 30, 1908.

Province.	Entries filed.				Canceled or withdrawn.				Action pending.				Patents issued.				Amount received.
	Area.				Area.				Area.				Area.				
	Number.	Hectares.	Ares.	Centares.	Number.	Hectares.	Ares.	Centares.	Number.	Hectares.	Ares.	Cantares.	Number.	Hectares.	Ares.	Centares.	
Albay	102	5,496	....	...	69	3,760	....	....	33	1,736	....	....	....	....	....	....	.....
Cebu	149	9,456	....	...	114	7,216	....	....	33	2,112	....	....	2	128	....	....	₱12,800.00
Mindoro	45	2,847	65	...	31	1,981	3	20	13	832	....	....	1	84	61	80	3,461.80
Negros Occidental	2	112	....	...	2	112	....	....	....	....	....	....	....	....	....	....	.....
Sorsogon (Masbate)	5	330	....	...	2	120	....	....	3	210	....	....	....	....	....	....	.....
Tayabas	42	2,432	....	...	35	1,984	....	....	7	448	....	....	....	....	....	....	.....
Zambales	1	9	....	...	1	9	....	....	....	....	....	....	....	....	....	....	.....
Total	346	20,682	65	...	254	15,182	3	20	89	5,338	....	....	3	162	61	80	16,261.80

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Detailed statement of mineral and mining claims filed under the provisions of acts of Congress of July 1, 1902, and February 6, 1905, and Acts Nos. 624, 777, and 855 of the Philippine Commission during the period from July 1, 1907, to and including June 30, 1908.

Province.	Lode claims.					Placer claims.									Total lode and placer claims.
	Copper, rubies, and silver.	Gold.	Silver and lead.	Not stated.	Total lode claims.	Gold.	Guano.	Iron.	Limestone.	Manganese.	Ocher.	Sulphur water.	Not stated.	Total placer claims.	
Ambos Camarines	....	33	....	....	33	29	....	....	....	....	....	....	....	29	62
Batangas	....	....	....	....	....	....	1	....	....	....	....	....	....	1	1
Benguet	1	330	....	....	331	....	....	....	....	....	....	....	....	....	331
Bulacan	....	....	....	....	....	....	6	1	....	....	....	....	....	7	7
Capiz	....	....	....	....	....	....	....	....	....	....	....	....	1	1	1
Ilocos Norte	....	....	....	....	....	....	....	....	....	6	1	....	3	10	10
Lepanto-Bontoc	....	....	....	24	24	....	....	....	....	....	....	....	....	....	24
Mindoro	....	....	....	....	....	16	....	....	....	....	....	....	....	16	16
Moro	....	....	....	....	....	2	....	....	....	....	....	....	....	2	2
Negros Occidental	....	....	....	....	....	....	....	....	....	....	....	2	....	2	2
Nueva Ecija	....	....	....	....	....	3	....	....	....	....	....	....	....	3	3
Rizal	....	1	....	1	2	....	1	....	1	....	....	....	1	3	5
Sorsogon (Masbate)	....	138	....	....	138	8	....	....	....	....	....	....	....	8	146
Surigao	....	....	....	....	....	24	....	....	....	....	....	....	....	24	24
Tayabas	....	6	11	....	17	....	....	....	....	....	....	....	....	....	17
Union	....	....	....	....	....	1	....	....	....	....	....	....	....	1	1
Total	1	508	11	25	545	83	8	1	1	6	1	2	5	107	652

Detailed statement of mineral and mining claims filed under the provisions of acts of Congress of July 1, 1902, and February 6, 1905, and Acts Nos. 624, 777, and 855 of the Philippine Commission, during the period to June 30, 1908.

Province.	Lode claims.													
	Asbestos.	Copper.	Copper, rubies, and silver.	Galena.	Gold.	Gold and copper.	Gold and silver.	Gold, silver, and copper.	Iron.	Iron and copper	Manganese	Silver and lead.	Not stated.	Total lode claims.
Ambos Camarines	....	....	....	....	246	....	1	....	....	....	....	....	....	247
Antique	....	....	....	....	3	....	....	....	....	....	....	....	....	3
Batangas	15	....	....	....	13	....	....	....	....	....	....	....	....	28
Benguet	....	....	1	....	792	1	....	1	....	....	....	....	....	795
Bulacan	....	....	....	....	....	....	....	....	16	....	....	....	....	16
Cebu	....	....	....	....	....	....	....	....	....	....	....	....	12	12
Ilocos Norte	16	....	....	....	....	....	....	....	....	....	19	....	....	35
Ilocos Sur	1	....	....	....	....	....	....	....	....	....	....	....	2	3
Lepanto-Bontoc	....	....	....	....	179	67	....	....	....	....	....	....	24	270
Misamis	....	43	....	....	8	....	....	....	....	....	....	....	....	51
Pangasinan	....	21	....	....	3	47	....	....	....	....	....	....	16	87
Rizal	....	1	....	....	1	....	....	....	1	1	....	....	4	8
Sorsogon (Masbate)	....	....	....	....	492	....	....	....	....	....	....	....	....	492
Surigao	....	4	....	....	43	....	....	12	....	....	....	....	....	59
Tayabas	....	3	....	4	17	....	1	....	....	1	....	11	....	37
Zambales	....	....	....	....	3	....	....	....	....	....	....	....	....	3
Total	32	72	1	4	1,800	115	2	13	17	2	19	11	58	2,146

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Detailed statement of mineral and mining claims, etc.—Continued

Province.	Placer claims.													Total lode and placer claims.
	Gold.	Guano.	Iron.	Kaolin.	Limestone.	Manganese.	Marble.	Ocher.	Petroleum.	Stone, building.	Sulphur water.	Not stated.	Total placer claims.	
Ambos Camarines	132	....	....	....	....	....	....	....	....	....	....	....	132	379
Antique	2	....	....	....	....	....	....	....	....	....	....	....	2	5
Bataan	....	....	....	....	....	....	....	....	....	1	....	....	1	1
Batangas	....	2	....	2	....	....	....	....	....	....	....	....	4	32
Benguet	91	....	....	....	1	....	....	....	....	....	....	....	92	887
Bulacan	2	8	12	....	....	....	....	....	....	....	....	....	22	88
Capiz	1	....	....	....	....	....	1	....	....	....	....	1	3	3
Cebu	....	....	....	....	....	....	....	....	....	....	....	12	12	24
Ilocos Norte	....	....	....	....	....	6	....	1	....	....	....	3	10	45
Ilocos Sur	....	....	....	....	....	....	....	....	....	....	....	....	....	3
Iloilo	....	1	....	....	....	....	....	....	....	....	....	....	1	1
Laguna	....	....	....	20	....	....	....	....	....	....	....	....	20	20
Lepanto-Bontoc	24	....	....	....	....	....	....	....	....	....	....	....	24	294
Mindoro	29	6	....	....	....	....	1	....	....	....	....	....	36	36
Misamis	....	....	....	....	....	....	....	....	....	....	....	....	....	51
Moro	9	....	....	....	....	....	....	....	....	....	....	....	9	9
Negros Occidental	....	....	....	....	....	....	....	....	....	....	2	....	2	2
Nueva Ecija	19	....	....	....	....	....	....	....	....	....	....	17	36	36
Pangasinan	....	....	....	....	....	....	....	....	....	....	....	....	....	87
Rizal	16	14	4	....	7	....	....	....	....	2	....	5	48	56
Sorsogon (Masbate)	53	....	....	....	....	....	....	....	....	....	....	....	53	545
Surigao	31	....	....	....	....	....	....	....	....	....	....	5	36	95
Tayabas	1	31	....	....	3	....	....	....	61	....	....	....	96	133
Union	1	....	....	....	....	....	....	....	....	....	....	....	1	1
Zambales	....	....	....	....	....	....	....	....	....	....	....	....	....	3
Total	411	62	16	22	11	6	2	1	61	3	2	43	640	2,786

SURVEYING AND DRAFTING.

The increase in the work and in the personnel of this division during the year made necessary the subdivision into sections, and the division is now organized into the surveying section, the computing section, the drafting section, and the student section, each under the supervision of a technical employee. The technical force of surveyors has been increased by the employment of new men from the United States who have passed the surveyor examination there and been appointed through the bureau of civil service. During the year the bureau has lost 20 surveyors through transfer, resignation, etc., 10 of whom have been men of over a year's experience in the Philippine Islands, and the loss to the division has been a serious one, but inasmuch as many of them were qualified engineers and the bureau of engineering lacked such men, the transfers were made with a view to assisting the bureau of public works in its efforts to obtain engineers. While this has been disadvantageous to this bureau, yet it is believed that it has resulted in a benefit to the government, and the problem of retaining those in this division who have had engineering training and experience will be a difficult one, as such men naturally desire engineering work, but notwithstanding the loss of them the force at the end of the year is practically that authorized by law. It has been impossible, however, to obtain Filipino draftsmen who have ability to plat surveys by coordination with a scale and a protractor, and who are also good draftsmen. The bureau has been able to make use of graduates of the Nautical School as computers, as it has been possible to fill positions with Filipino employees when it was expected to use Americans at higher salaries.

The increase in the personnel was from 75 to 113, the force now consisting of 60 surveyors, 26 computers, 18 draftsmen, and 9 apprentice surveyors.

The work of this division during the year consisted of the survey of 17,674 parcels of land, containing 81,813 hectares, at a total cost of ₱366,629.83, which

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does not include the cost of computation and drafting of more than one-third of the area included in the friar-lands surveys during the year, owing to the lack of personnel to complete this work.

FRIAR-LANDS SURVEYS.

All the field work of friar-lands surveys has been completed during the year. A total of 61,043 hectares was surveyed at a cost of ₱202,435.09, an average cost of ₱3.32 per hectare. A resurvey of the Binagbag and Guiguinto estates was found necessary for the reason that errors were found in the location of the lot boundaries thereof, and in many instances the surveyors had attempted to rearrange the lot boundaries in order to reduce the number of sides, and the tenants therefore complained, and resurveys were ordered. The two surveyors having charge of the original surveys on these estates were presumed to be competent men qualified to do the work, one having been an assistant city engineer and the other a former division engineer on the Pennsylvania Railroad. Owing to the large amount of work on hand in the surveying division it was impossible for the chief surveyor to personally supervise the work of surveying these estates, and as it was impossible to check and compute the same for several months after the field work had been finished, the errors were not discovered until almost a year after the original survey. One of these surveyors was discharged from the service for cause, and the other was transferred to the bureau of public works. It was also impossible to detail inspecting surveyors to supervise the work, as every surveyor was needed in actual field work in order to accomplish the desired completion of the surveys of the friar estates at the close of the fiscal year. Detailed instructions of the manner in which these surveys should be made were supplied to all chiefs of parties, and were supplemented at various times by circulars enjoining strict compliance therewith. Additional surveys were also necessary on several of the estates owing to the subdivision of lots for which leases had been executed, and additional subdivision surveys will probably be necessary in the future as the lands become subdivided among heirs of original tenants.

There is hereby submitted a statement of the work accomplished on friar estates during the year, followed by a consolidated statement of work performed on the subdivision survey of each friar estate during the last three fiscal years, with explanatory notes:[a]

These statements are followed by a statement showing the date of completion of surveys and the status of all computations and plans of friar estates, with the probable date of completion of the computations thereof.[a]

The areas reported surveyed on the various estates closely approximate the areas as given by the bureau of engineering survey, which was a stadia survey. As each estate is computed, slight differences will be found in the total areas, due to the more accurate survey made by this bureau.

Below is a list of the areas of the various estates as determined by the bureau of engineering and by the planimeter areas taken from the progress maps of this bureau:

[Areas in hectares.]

	Bureau of engineering.	Bureau of lands.	Bureau of lands.	
			Plus.	Minus.
Banilad	1,925	1,925	0	0
Binagbag	294	305	11	.....
Biñan	3,659	3,987	328	.....
Calamba	13,673	12,985	.....	688
Dampol	929	918	.....	11
Guiguinto	946	967	21	.....
Imus	18,243	18,146	.....	97
Isabela	19,891	19,891	0	0
Lolomboy	5,177	5,103	.....	74
Malinta	3,574	3,576	2	.....
Matamo	12	12	0	0
Muntinlupa	2,827	2,893	66	.....
Naic	7,624	7,162	.....	462

[a] All of these tabular statements together with notes regarding same have been omitted and are on file in the Bureau of Insular Affairs, War Department.

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	Bureau of engineering.	Bureau of lands.	Bureau of lands.	
			Plus.	Minus.
Orion	916	914	.....	2
Piedad	3,860	4,224	364	.....
S. F. de Malabon	11,449	11,884	435	.....
San José	23,266	23,266	0	0
San Marcos	87	87	0	0
S. C. de Malabon	9,795	9,890	95	.....
S. M. de Pandi	10,342	10,257	.....	85
Santa Rosa	5,470	5,483	13	.....
Tala	6,696	4,077	.....	2,619
Talisay	8,020	8,376	356	.....
Total	158,675	156,328	1,691	4,038
	156,328			1,691
	2,347	Minus.....		2,347

An area of approximately 1,500 hectares of unoccupied land on the Tala estate was not surveyed, as it was believed possible to lease the same in one tract.

PUBLIC-LAND SURVEYS.

The following tabulated statement shows the area and cost of all public land and insular government surveys executed during the fiscal year by or under the supervision of the bureau of lands:

Summary of area and cost of all public land and insular government property surveys executed during fiscal year 1908 by or under the supervision of the bureau of lands.

Class of survey.	Number of surveys.	Number of parcels.	Cost per hectare.	Area (square meters.)	Cost.
Unperfected title, section 58	172	234	₱4.27	24,476,797	₱10,455.61
Unperfected title, section 66	145	227	2.27	93,306,264	21,212.99
Coal claims	21	21	3.79	12,000,000	4,546.65
Lode claims	21	21	33.36	1,720,284	5,737.83
Lode claims (by deputies)	14	14	5.86	1,193,517	700.00
Placer claims (by deputies)	6	6	6.63	452,227	300.00
Lease	17	17	1.36	66,458,003	9,045.68
Sales	3	3	3.12	2,876,565	898.53
Homesteads	1	1	4.49	159,948	71.93
Town site (boundary)	4	4	6.55	4,042,553	2,648.70
Town site (subdivision)	1	52	80.24	250,000	2,005.97
Reservations (insular)	8	8	76.65	237,654	1,824.31
Reservations (provincial)	3	3	9.40	310,368	291.46
Reservations (municipal)	3	3	307.60	4,066	123.05
Foreshore	1	1	43.08	6,665	30.16
Insular government properties	5	5	37.91	206,397	780.96
Total	425	620	.....	207,701,308	60,673.83

Average cost per survey	₱142.76
Average cost per parcel	97.86
Average cost per hectare	2.92
Average area per survey ---------- hectares	48.7
Average area per parcel ---------- do	33.5

Owing to the haste to complete friar-lands surveys, considerable delay was occasioned in the survey of public lands, but as fast as those of friar lands were completed surveyors were detailed for those of public land, so that at the close of the year 35 surveyors were upon this work, which number should be increased to 52 within the following month, and at the close of the fiscal year all public-land surveys had been ordered, and work thereon was progressing.

The following statement shows the surveys on which field work had been completed, but which were pending completion of computation and plans, and

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those surveys which had been ordered, the field work on which has not been reported upon:

	Surveys completed, pending completion computation and plans.	Surveys ordered and not reported.
Section 58	15	9
Section 66	32	50
Reclamation	1	9
Insular government	1	1
Municipal	7	1
Town sites	2	.....
Town sites, subdivisions	5	.....
Insular reservations	1	.....
Lease	.....	11
Foreshore	.....	1
Total	64	82

The average cost per hectare of sections 58 and 66 surveys, Act No. 926, for the fiscal year 1908, was, respectively, ₱4.27 and ₱2.27. There were 234 parcels surveyed under the provisions of section 58, Act No. 926, the average area per parcel being 10.4 hectares, and the average cost being ₱44.68 per parcel. Of these surveys none exceeded 500 hectares in area and 101 contained less than 1 hectare. Of the 227 parcels surveyed under the provisions of section 66, the average area was 41.1 hectares, at an average cost of ₱93.45 per parcel. However, 3 of these surveys averaged more than 2,200 hectares each, with an aggregate cost of ₱2,670. Eliminating these 3 from the totals of section 66 surveys, the average cost per hectare of ₱7.04 would be nearer the actual cost of this class of work.

The average cost per hectare of sections 58 and 66 surveys for the fiscal year 1907 was ₱1.89 and ₱2.85, respectively, showing an increase in the cost for the fiscal year 1908 per hectare of section 58 surveys of ₱2.38, and a decrease of ₱0.58 in the cost of section 66 surveys.

The average area per parcel of sections 58 and 66 surveys made during the fiscal year 1907 was 26.8 and 35 hectares, respectively, the average parcel being 2.5 times larger in the first case and slightly smaller in the second case for the fiscal year 1908.

The average cost per hectare of all public-land surveys executed during the fiscal year 1908 was ₱2.92, and for the fiscal year 1907 ₱2.98, showing a decrease of ₱0.06 per hectare for all surveys.

There is very great difficulty in obtaining any accurate average cost per hectare for surveying in the Philippine Islands, as the distance from Manila of the survey to be made appears to be the most important determining factor, and until such time as the surveyors of this bureau are located in different provinces it will be impossible to give the relative average cost of different classes of surveys with any degree of accuracy. In the past it has been impossible to avoid the sending of surveyors to distant points to make isolated surveys, as it was necessary they should be made at whatever cost under the law, but wherever possible this bureau has held surveys for different districts until sufficient work was on hand to warrant the sending of a surveyor to the district; thus, in the province of Bohol some surveys have been delayed for many months for the reason that it was impossible to spare a surveyor to make the trip, although it is manifestly unjust to the applicant to be thus delayed in the obtaining of title to his property. At the present time, however, surveyors have been scattered throughout the provinces, and hereafter surveys for the court of land registration should be completed within a reasonable time. Very few cases surveyed under the provisions of section 66, Act No. 926, have been objected to by the applicant before the court of land registration, and those objected to were due to erroneous boundaries or the fact that the survey made by this bureau did not agree with that previously decreed by the court. The surveyor can not be held at fault in these cases, as the applicant, through his agent, points out to him erroneous boundary lines. Seldom does the applicant know where and what his boundaries are, except in a very general way, and he will almost invariably detail a servant to go upon the ground with the

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surveyor to point out the boundaries. This would make little difference if the adjoining owners would also appear upon the ground at the time of the survey and agree to and witness the marking of the corners, but adjoining owners also display a great disinclination to assist in this work.

The requirement of the court of land registration that the surveys made by this bureau under the provisions of section 66, which adjoin properties previously decreed, shall conform in bearing and distance with such decree, has been consistently opposed by this bureau. The practice of amending an accurate survey without an actual resurvey of both properties would result eventually in great confusion and inaccuracies in property descriptions, to obviate which the land court was organized. A relative degree of accuracy should be established for surveys of municipal properties and for country or farm properties, and all plans submitted to the court should be checked. Those which fall below the standard should be rejected, and surveyors who consistently fail to submit plans of the required accuracy should be debarred from making surveys to be presented to the court. Under the provisions of Act No. 1875 the regulation of this detail will hereafter be with the director of lands, as all plans to be submitted to the court must be approved by the director of lands.

The following campaign of instruction to municipal officials and private landowners has been inaugurated to be carried out by survey parties in the field:

Upon receipt of applications for surveys in the provinces where survey parties are located, such parties are instructed to make surveys of the municipalities as rapidly as possible; to consult with municipal and provincial officials and landowners, advising them of the benefits to be derived from the registration of their land; the probable cost of making surveys by the bureau of lands; the method of obtaining that cost, and the reduction of the cost from the fact of a large number of surveys within a given district. Provincial governors have been furnished with a circular letter advising them of the provisions of Act No. 1875 and the steps taken by this bureau in accordance therewith, and requesting their cooperation and that of municipal officials with the surveyors of this bureau.

In addition to the above surveys made under the provisions of sections 58 and 66, there have been completed during the year 21 coal-claim and 21 lode-claim surveys, of which 14 were made by Philippine deputy mineral surveyors, and 6 placer-claim surveys by Philippine deputy mineral surveyors; also 17 lease surveys, 10 of which were located in the Davao district and aggregated an area of 6,000 hectares. The boundary surveys of Sibul Springs, Dansalan, Malabang, and Parang town sites have been completed and plans prepared, and the Sibul Springs Reservation has been finished and approved by the Philippine Commission. Three other town sites in the Moro Province have been delayed on account of irregularities in titles, which are now being investigated. The topographic, parcel, and subdivision surveys of Olongapo town site have been completed and plans are now being prepared.

Continuous surveys of subdivisions of the Baguio town site have been made and the surveys of approximately 40 new lots have been completed. Work is progressing on the Davao town site, while the Jolo and Cotabato town sites will be given early consideration, as soon as surveyors are available. Five parcels of insular government land in the city of Manila have been surveyed preparatory to registration of title. The Manila Harbor reclamation project has been surveyed and subdivided in accordance with the plans submitted by the consulting architect. Reference monuments have been located along the Malecon drive and bulkhead lines and the property should be ready for lease the early part of the coming fiscal year.

Three sale and 1 homestead surveys were also completed during the year, and also those of 8 insular reservations; 3 municipal and 3 provincial reservations have been finished, and 1 survey for lease of parcel of land lying on the foreshore.

ROAD SURVEYS AND MONUMENT LOCATIONS.

Field work.—Surveys of 9 municipalities located in the provinces of Bulacan, Palawan, and Moro were completed. Trail and river reconnoissance and topographic sketching of 557 kilometers in the province of Benguet was finished during the year and plans prepared. There have been executed in the province of Lepanto-Bontoc 376 kilometers, but plans thereof have not been prepared. Of accurate provincial road surveys in the province of Bulacan, 82 kilometers have been executed and completed, and on June 30 about three-quarters of the

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entire field work of the survey of provincial roads and municipalities of the province of Bulacan had been finished. In the province of Palawan 51 kilometers of accurate road survey have been completed on the islands of Cuyo and Busuanga. These provincial road surveys will definitely locate provincial, municipal, and, ultimately, barrio boundaries in the various provinces, and will also be of value to the different divisions of the government as well as to this bureau in the location of permanent monuments, to which all surveys will in future be referred. They will be platted upon polyconic projection sheets, to a scale of 1:50,000, and as fast as surveys of private properties are executed in the provinces, they will also be transferred to the polyconic sheets. This will eventually result in a map showing definitely the boundaries and areas of public lands by process of elimination, and while the completion of such plans will be the work of years, yet in some provinces the work should be finished in the near future. These surveys, however, are not interfering with those made under the provisions of sections 58 and 66 of Act No. 926, but on the contrary are made when surveyors are not engaged in this work. The surveys of the streets in poblaciones will be executed and platted upon a scale of 1:2,000. These maps will serve as base maps for this office and will be available for the court of land registration and provincial and municipal officials, not only for the purpose of registration of titles and determination of the location of property, but also for the purpose of tax assessments. It is expected that this bureau will be reimbursed to some extent for the expense of making these surveys by the sale of plans to provinces and municipalities.

COMPUTATIONS.

The work of computing increased to such an extent during the year that it was found necessary to make a separate computing section with a technical surveyor in charge thereof, in order to push the work, particularly on friar lands survey computations. Four different employees were tried as chief of this section, but none appeared to possess the executive ability or the faculty of handling such a large amount of detail as is required, and the result has been that less work has been accomplished in this line than was expected. However, in the last three months a chief has been found who appears satisfactory, and the work is now progressing. The installation of "Millionaire" computing machines early this year was found to greatly facilitate the work, and at present there are 4 of these machines in use, it being estimated that 2 men working with the computing machine can accomplish the work of 6 men making the same computations by the use of logarithmic tables. It is estimated that it will require at least two years to complete the computation work of the friar-lands surveys, based upon a force of at least 25 computers working continuously. In addition, computations must be kept up upon public lands and other surveys.

DRAFTING.

The drafting force during the year has been unable to keep abreast of the large amount of work, although the final maps of the friar lands have been given precedence. It has been difficult to secure good Filipino draftsmen who are thoroughly competent to handle the work given them, and very close supervision is necessary. Two American draftsmen were secured during the year, one of whom has been transferred to the bureau of public works, as it was unable to obtain a qualified draftsman in any other manner. It is expected to fill this vacancy in a short time from the United States.

APPRENTICE SURVEYORS.

On July 1, 1907, there were 5 apprentice surveyors certified by the director of education, who had received from one to ten months' instruction in this course. None of these apprentices were able to pass the junior surveyors' examination and were retained in the class of apprentice surveyors. There were certified by the director of education 9 more apprentice surveyors, of whom 5 have resigned or have been discharged, leaving a total on June 30 of 9 in this class. The work of this class has shown steady improvement during the year. Special attention has been given to instruction in mathematics. New students now entering this class are better prepared than those of two years ago. The theory of the transit adjustments has proved difficult to the students, while the work in algebra, geometry, and trigonometry has shown steady improvement. Of the 9 students surveyors, 8 were successful in the examination

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for appointment as junior surveyors. The results of this examination are very gratifying, and students will receive appointment as junior surveyors as soon as their contracts have been executed and approved by their parents or guardians. Of new students, 18 have been certified by the director of education for the coming year. It is believed impossible to cover the subject of surveying in these classes in less than two years. At the end of the coming fiscal year the 8 junior surveyors will be sent to the field as assistants with survey parties to continue their instruction in practical and theoretical surveying, and upon the character of their work will be determined the success or failure of the scheme for educating surveyors in this bureau.

WORK PROPOSED FOR THE FISCAL YEAR 1909.

Under the provisions of Act No. 1875 it will be necessary for this bureau to keep in the provinces at all times a sufficient number of surveyors to do all the work applied for under the provisions of sections 58 and 66 of Act No. 926. It is therefore proposed to establish survey parties of two transits each in the following provinces: Albay, Ambos, Camarines, Bataan, Batangas, Benguet, Bohol, Bulacan, Capiz, Cavite, Cebu, Iloilo, Laguna, Leyte, Mindoro, Moro, Nueva Ecija, Occidental Negros, Palawan, Pampanga, Pangasinan, Rizal, Sorsogon, Tayabas, and Tarlac, and from these provinces surveys in other provinces and subprovinces will be made, and it is expected that with this organization this bureau will be able to accomplish at least 20,000 parcel surveys, at an average price of ₱2.20 per hectare. In addition, survey parties will be available for all mining, lease, sales, reclamation, and reservation surveys whenever necessary. The cost of surveys should be materially reduced by having the surveyors near the point where the work is to be done, rather than, as in the past, to send them from Manila for a month or two at a time, charging the cost of their transportation to and from Manila to the surveys made during the time of their absence.

Increased activity in public-land surveys outside of those of the court of land registration is expected, and it will be necessary to make many free-patent surveys during the year.

It appears to be a well-established fact that the descriptions of properties decreed by the court of land registration in a large majority of cases are inaccurate beyond a safe or allowable error of closure. The question has arisen as to whether or not it is advisable at this time to rectify the inaccurate surveys decreed by the court. This could be done by forwarding plans and descriptions of decreed cases by the land court to the provincial surveyor with orders to make a resurvey of the same whenever surveys of near-by properties are made. The cost of these resurveys, new plans, and descriptions should be a proper charge against the insurance fund of the court of land registration for the protection of titles registered under the Torrens system. Amendment to the land registration act may be necessary to effect this new survey when property owners refuse to permit a change in their certificates, but it is believed that the advantages of such procedure would more than equal the expense involved, and if the work is executed promptly thousands of pesos might be saved the insurance fund, as, undoubtedly, lawsuits due to erroneous descriptions will arise as time passes and the number of registered properties increases.

SAN LAZARO ESTATE.

At the date of the last annual report, that portion of the San Lazaro estate which was being administered by this bureau consisted of the following property:

	Assessed value.	Estimated income.
The main estate, consisting of 116 city blocks in the district of Trozo, Manila; approximately 110 hectares, excluding street areas	₱1,752,000.00	₱55,444.94
2 detached parcels in the district of Sampaloc, consisting of 50,482 square meters	4,270.00	130.00
10 city lots in the district of Intramuros, on which it is claimed censos exist	63,609.28	222.86
2 city lots, with improvements, in the district of Intramuros	17,695.00	960.00
An annuity on a parcel of land in the district of Santa Ana	2,166.67	65.00
Total	1,839,740.95	56,822.80

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	Assessed value.	Estimated income.
The lot on which San Lazaro Hospital is located, approximately 12½ hectares	₱188,000.00	
With improvements, which are administered by the bureau of health	300,000.00	
Total value of properties	2,327,740.95	₱56,822.80

This estate was in litigation, the Archbishop of Manila having brought suit against the government of the Philippine Islands for possession and right of administration, which suit had been pending since 1906. In the settlement of the questions relative to the administration and title to various estates and properties, heretofore a matter of dispute between the Roman Catholic Church and the government of the Philippine Islands (Act No. 1724 of the Philippine Commission), a portion of the San Lazaro estate was ceded to the Archbishop of Manila, and on November 8, 1907, in accordance with the terms of the agreement, a consent decree was issued by the court of first instance of the city of Manila, finally disposing of the litigation heretofore mentioned on the following terms:

Now therefore, it is hereby ordered, decreed, and adjudged:

"First. The title, possession, and right of administration of all that part of the San Lazaro estate, the property set forth in the complaint in this action described as follows, to wit: Block 156 and blocks Nos. 159 to 210, both inclusive, or to such parts of said blocks as belong to the San Lazaro estate, situated in the city of Manila, P. I., as shown on the copy of the plan attached to an agreement entered into by Jeremiah J. Harty, archbishop of the city of Manila, representing the plaintiffs, and William H. Taft, Secretary of War, representing the government of the Philippine Islands, on the 8th day of June, 1907, and identified by the indorsement on the back thereof as follows: 'Map referred to in agreement June 8, 1907, identified in duplicate. Jeremiah J. Harty, Archbishop of Manila. Wm. H. Taft, Secretary of War,' which plan is now on file in the office of the executive secretary attached to papers filed under Executive Bureau No. 97639–a–15, the above tract of land being delineated and described as block 65 and blocks 68 to 115, both inclusive, on a later official map of the San Lazaro estate now on file in the office of the director of lands and identified by the certificate of the director of lands indorsed on the back thereof; all subject to the dedication to the public use of the streets and alleys shown on the said last-mentioned plat, is hereby decreed and adjudged to the Roman Catholic Church of the Philippines.

"Second. The title, possession, and right of administration of the remainder of the property belonging to the San Lazaro estate, the subject of this action, and described as follows, to-wit: Blocks Nos. 1 to 64, inclusive; blocks 66 and 67; the tract known as 'prison extension' and the unplatted land on the south and east sides of the site of Bilibid prison, as shown on the official map of the San Lazaro estate now on file in the office of the director of lands and identified by the certificate of the director of lands indorsed on the back thereof;"

Also:

"1. House and lot at No. 17 Calle San Francisco.

"2. House and lot at Nos. 155 to 159 Calle Victoria."

Also the following parcels of property to which the respective occupants claim the beneficial title by reason of the annuities (censos) expressed opposite each tract, to wit:

"1. Lot at No. 168 Calle Real, corner Solana; subject to annuity of twenty-three pesos annually;

"2. Lot at No. 182 Calle Real; subject to annuity of eleven pesos and ninety-three centimos annually;

"3. Lot at Nos. 107 to 109 Calle San Juan de Dios, subject to annuity of thirteen pesos and sixty-nine centimos annually;

"4. Lot at No. 115 Calle San Juan de Dios; subject to annuity of nineteen pesos and twenty centimos annually;

"5. Lot at No. 25 Calle San Francisco; subject to annuity of eighteen pesos and fifty centimos annually;

"6. Lot at No. 202 Calle Solana; subject to annuity of thirty-eight pesos and thirty-seven centimos annually;

"7. Lot at No. 196 Calle Solana; subject to annuity of eleven pesos and thirty-seven centimos annually;

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"8. Lot at No. 190 Calle Solana; subject to annuity of ten pesos and eighty centimos annually;

"9. Lot at Nos. 187 to 197 Calle Solana; subject to annuity of forty-five pesos annually;

"10. Lot at No. 249 Calle Solana; subject to annuity of thirty-one pesos annually;

"11. Lot situated in Santa Ana, occupied by the Jesuit Fathers; subject to annuity of sixty-five pesos annually.

"All situated within the city of Manila, Philippine Islands: Together with all lands, claims to lands or the rents thereof, buildings, or other property and investments, real, personal, or mixed, belonging to or in anywise appertaining to the San Lazaro estate, and not herein decreed to the Roman Catholic Church, are hereby decreed and adjudged to the government of the Philippine Islands in trust for the benefit and use of a hospital for lepers in compliance with the intentions expressed at the foundation of the San Lazaro estate and, failing such purpose, for other similar charitable institutions and hospitals, in the discretion of the government of the Philippine Islands.

"It is further ordered and adjudged, that no costs be taxed by either party in this action.

"Done in open court at the city of Manila this 8th day of November, 1907.

"By the Court.

MANUEL ARAULLO."

This final settlement of the matter of the San Lazaro estate divided the same by a line running east and west, as shown on the plat herewith,[a] leaving to be administered by the government of the Philippine Islands the property shown in inventory of June 30, 1908. See page —.

This settlement granted to the church authorities the following property:

	Area (square meters).	Value.	Annual rents.
Forty-eight blocks or partial blocks, district of Trozo, Manila, excluding street areas	395,316	₱144,712	₱8,954.86
Claim for payment for area occupied by Manila and Dagupan Railroad right of way	16,000	5,600	None.
Total	411,316	150,312	8,954.86

Street areas, 191,450 square meters.

The date of the transfer from the insular government was fixed by the consent decree as November 8, 1907, but in order to facilitate the collection of rents this bureau administered the estate and collected all rents until December 31, 1907, when the transfer of the administration of that portion of the estate to be given up by the government was completed, and this bureau turned over to the church authorities ₱1,388.95 in rents collected between the date of transfer and the date of final settlement.

By reference to the above statements it will be seen that that portion of the estate transferred reduced the value of the estate administered by the government from ₱2,327,740.95 to ₱2,177,428.95 and reduced the contracted rentals from ₱57,217.90 to ₱48,263.04.

Since the division of the San Lazaro estate a survey has been made thereof with a view to registering same with the court of land registration as soon as practicable. This includes a block and lot survey, except of those lots which are too low for residential purposes and are devoted to the cultivation of grass, as, until they are filed, they are not available for residences and produce very little revenue, which depends entirely upon the crops and is uncertain, owing to the overflow of the esteros covering them with brackish water at times.

All the blocks which have been subdivided have been rearranged, the buildings moved, and the ground leased according to the new subdivision, thus leaving the streets free for public purposes, and it is intended when the property is registered to do so by blocks, in such a manner as to leave the streets and alleys open for public purposes.

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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The completion of the subdivision survey and registration of the estate will reduce the cost of administration, while a gradual increase of the annual rents may be anticipated.

The rents on the San Lazaro estate are now fixed on a basis of 5 per cent of the assessed value of the property, and if the entire estate available were leased the maximum rent would approximate ₱80,000.

Every attempt has been made to have the city of Manila undertake the improvements to the street systems on the estate, but very little has been accomplished. However, the city is at the present time filling in large holes which have heretofore been such a nuisance, as they are filled with water at most seasons of the year, but before the revenues of the estate are materially increased much greater improvement is necessary and the property must be made available by street improvement and extension of the electric light and water to those portions of the estate now without these conveniences.

While some improvements may be made upon this estate with the funds at the disposal of this bureau, yet until the street system is completed no great increase in income can be expected. It is believed, however, that the cost of administration will be materially reduced during the year, and it is estimated that the gross receipts will reach ₱50,000 and the gross expenditures will approximate ₱6,000, or a net income from the estate approximating ₱44,000.

During the past year there was authorized the construction of 5 buildings of strong and of 148 of light and mixed material. Repairs and additions were also authorized upon 20 of strong and of 388 of light and mixed material.

The estate now includes 2,383 lots, of which 1,824 are occupied and 559 vacant, with a total number of 1,199 tenants, of which 1,164 are at will, 29 have leases of six years, and 6 have leases of over six years.

During the year several blocks which were formerly divided into lots on the old subdivision plan have been rearranged into the regular subdivision. This has increased the number of lots on the estate. In the transfer of the property to the church authorities, 1,281 lots were transferred, of which 948 were occupied and 333 vacant. The total number of tenants transferred was 624.

The bureau of prisons has completed the construction of the wall surrounding the new prison hospital, thus reducing the area of the estate available for rent.

The total amount of rentals received was ₱52,694.28, as compared with ₱53,467.37 for the fiscal year 1907, a decrease of about 1.5 per cent, which was due entirely to the portion of the estate transferred to the church authorities, and if the same had not been transferred, there would have been an increase of approximately 10 per cent during the year.

The delinquent roll on June 30, 1908, amounted to ₱9,449.25, nearly all of which should be collected within a reasonable time. In relation to these delinquents, it may be stated that it has been the policy of the bureau to permit the lessees of the grass lands and large holdings to delay their payments of the rents, and thus they appear as delinquents, but they are gradually decreasing the delinquent amount, and as they have long been tenants on the estate, it is believed advisable to permit this delay in payment rather than to bring suit, eject them from the premises, and charge off as a loss the rent due, when by carrying them along it is probable that the rent at some future time will be paid.

Suits in ejectment to the number of 207 were brought during the year against tenants of the estate, of which 181 were compromised on payment of the rent due and the costs, including ₱1 attorney's fee in each suit, and only 21 cases have gone to execution and the renters dispossessed, and 5 cases are pending.

The following statement shows the receipts and expenditures on the San Lazaro estate for the fiscal year 1908:

Receipts:	
Rents received from July 1, 1907, to June 30, 1908	₱54,083.23
Less amount transferred to the church authorities	1,388.95
Total receipts	52,694.28
Expenditures:	
Salaries of office force	5,212.85
Salaries of field parties	2,645.09
Incidental expenses	2,345.95
Total cost of administration	10,203.89
Net income on the San Lazaro estate	42,490.39

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The rents are collected by the bureau of internal revenue, this bureau making contracts, notifying tenants, making inspections, and otherwise administering the estate.

Before the San Lazaro estate may be made to produce a much greater income than at present, a considerable outlay must be made for improvements, consisting chiefly of a thorough system of surface drainage and the filling to grade of the properties which are low and below high-water mark in this district. This work can not be undertaken except by the cooperation of the city of Manila and the administrators of the San Lazaro estate, for the simple reason that the raising of the streets in the district would not suffice, nor would the raising of the area for rent be of any material benefit when the streets are impassable on account of the mud and water. However, it is believed that the city of Manila contemplates some improvements when funds are available, and this bureau has been endeavoring to obtain reasonable estimates for the draining and filling of portions of the estate, and during the present year will submit a specific recommendation on this subject. The title to the property having been settled, there appears to be no good reason why a portion of the income of the estate should not be devoted to its improvement.

In relation to the 10 properties in the district of Intramuros, on which it is claimed that censos exist, it has been requested that the attorney-general proceed to take the matter of these censos before a court of competent jurisdiction to determine the exact status of these properties. It is claimed that censos exist on all these properties by which the claimants may secure the title thereto at any time on payment of an amount equal to the capitalization of the censo on a basis of 3 per cent. The assessed value of these properties is ₱62,609.28. The annual rental, as stated by the claimants of censos, is only ₱222.86, which, capitalized at 3 per cent, equals ₱7,428.67. While the attorney-general has given his opinion that such annuities do exist, this bureau has never been able to obtain sight of any such documents, nor is the attorney-general able to define the terms thereof. Therefore, with a prospective loss in value of ₱55,180.61, this bureau has been loath to acknowledge the existence of the censos, and, in fact, since 1901, has refused to accept the payments of the annuities claimed to exist, and it is believed that no great burden will be imposed upon the claimants for these censos if they are called upon before a court to prove their rights, and if such rights are proved, they may then redeem and obtain possession of the property at about one-eighth of its assessed valuation.

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Inventory of property pertaining to San Lazaro estate, June 30, 1908.

Description.	Area, excluding streets and alleys.	Assessed valuation.		Annual rents contracted.	Property in which it is claimed leases exist.		
		Land.	Improvements.		Annuity.	Capitalization.	Name of claimant.
	Square meters.						
Main estate, consisting of 68 city blocks or parts of blocks located in the district of Trozo, Manila.	574,227.00	₱1,601,688.00	None.	₱46,490.04	.....	.....	
Two detached parcels in the district of Sampoloc, consisting of grass land:							
Parcel No. 1, north of Manila Railway	34,747.00	4,270.00	None.	130.00	.....	.....	
Parcel No. 2, south of Manila Railway	15,735.00						
City lots in district of Intramuros.							
Lot No. 1, corner Real and Solano	439.61	7,564.28	(b)	None.	₱23.00	₱766.67	Jose Varela.
2, No. 190 Solano	263.47	4,000.00	(b)	None.	10.80	360.00	Angel Ortiz.
3, No. 196 Solano	409.55	4,136.16	(b)	None.	11.37	379.00	Jose de la Rosa.
4, corner Solano and San Francisco	1,147.45	12,273.12	(b)	None.	38.37	1,279.00	Adolfo Urtazun.
5, No. 17 San Francisco	318.72	2,490.00	₱10,000.00	480.00	.....	(c)	
6, corner San Juan de Dios and San Francisco [a]	515.09	4,387.20	(b)	None.	18.50	616.67	Señora Albino de Goyenechea.
7, No. 115 San Juan de Dios	618.45	5,098.40	(b)	None.	19.20	640.00	Ramon Aenlle.
8, Nos. 107 and 109 San Juan de Dios	471.89	4,001.12	(b)	None.	13.69	456.33	Josefa Fernandez.
9, No. 182 Real	419.53	6,874.00	(b)	None.	11.93	397.67	Juan Muñoz.
10, Nos. 187–197 Solano	1,344.75	13,884.00	(b)	None.	45.00	1,500.00	Administrators de Obras Pies.
11, No. 249 Solano	142.35	1,391.00	(b)	None.	31.00	1,033.33	Do.
12, No. 157 Victoria	219.19	2,205.00	3,000.00	480.00	.....	(c)	
A beneficial interest in a parcel of land in Santa Ana, owned by the Jesuits.	.....	[d] 2,166.67	.....	.....	65.00	2,166.67	Jesuit Fathers.
The land occupied by San Lazaro Hospital, bounded by Calles Cervantes, Tayuman, Quincada, and Trozo Estero.	125,280.00	188,000.00	300,000.00	None.	.....	.....	Administered by the bureau of health.
Total	756,299.05	1,864,428.95	313,000.00	47,580.04	287.86	9,595.34	

[a] Area in streets, 230.213 square meters. [b] Property of occupant. [c] None claimed. [d] Capitalized at 3 per cent.

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FINANCIAL STATEMENTS.

The following statements show the receipts and expenditures of the bureau of lands for the fiscal year 1908.[a] The first shows the receipts of the bureau, which aggregate ₱348,688.04, an increase of ₱66,067.90 over those of the prior fiscal year, due to the increase in the friar lands rents and the receipts from surveys. It is estimated that the receipts for the coming fiscal year will exceed ₱400,000, although they may considerably exceed this amount if any large number of surveys for private parties are completed.

The receipts shown do not include the rents collected by the internal-revenue bureau on the San Lazaro estate, amounting to ₱52,694.28, but do the payments to the collector of internal revenue on account of sale of mineral lands, in order that the receipts from the sale of public lands may be all contained in this report.

Increased receipts from the sale and lease of public lands are estimated for the future, although it will be many years before the receipts from this source equals the large expense, on account of the homestead and free patent entries, which are being completed at an expense to the government of from ₱30 to ₱50 each.

The second statement shows the expenditures of the bureau as made in the different subdivisions of the work, which is followed by a statement of the expenditures apportioned to the proper subdivisions of the work, namely, public lands, friar lands, San Lazaro estate, and surveying and drafting.[a] These expenditures aggregate ₱558,694.26, an increase of ₱85,278.12 over the previous year, which may be segregated as follows: On account of public lands, ₱65,253.12; on account of friar lands, ₱40,618.36; on account of San Lazaro estate ₱755.32, while a decrease in the expenditures on account of the general office for furniture, fixtures, and the purchase of land has been reduced by ₱21,348.68. A great reduction in the expenditures on account of friar lands will be noticeable during the coming year, inasmuch as all field work for the surveys thereof has been completed, while increased expenditure on account of public-land surveys may naturally be expected, although the income therefrom should be materially increased. The appropriation for the year was ₱604,000, so that the expenditure was well within the limits of the amount appropriated, owing to the fact that it was impossible to obtain technical men to fill the positions authorized, and that many positions were filled at lower salaries than authorized.

Increased expenditures will probably be necessary for the coming year on account of the additional duties assigned to the bureau by Act No. 1875, and ₱700,000 has therefore been appropriated for the operation of the bureau for the coming fiscal year, which should be sufficient to meet all its needs for the purposes for which it was appropriated, although the reduction of the estimate of the bureau by ₱79,000 for the employment of computers will delay the final plans and computations of parcel surveys on friar lands for at least another year.

Respectfully submitted.

C. H. SLEEPER,
Director of Lands.

THE SECRETARY OF THE INTERIOR,
Manila, P. I.

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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APPENDIX F.

REPORT OF THE DIRECTOR OF AGRICULTURE.

DEPARTMENT OF THE INTERIOR,
BUREAU OF AGRICULTURE,
Manila, August 8, 1908.

SIR: I have the honor to submit herewith my report as director of agriculture for the fiscal year ended June 30, 1908:

ORGANIZATION.

The organization includes three divisions: Administrative, plant industry, and animal industry. There has been no change in the division organization during the year.

ADMINISTRATIVE DIVISION.

The increasing amount of executive and clerical work, the publication of a monthly journal, and the growth of the crop-reporting service have necessitated the reorganization of this division. In February, 1908, the position of chief clerk and that of fiber expert were abolished and an assistant to the director was appointed as chief of the administrative division. As a result of this reorganization, the director has been relieved of a large amount of minor executive work and the work of subordinate employees has been more clearly defined.

The administrative division now includes the following subdivisions: Clerical, agricultural extension work, crop reporting and statistics, agricultural explorations, steam plowing and machinery investigations, publications, and library and museum.

PERSONNEL.

The veterinary force has been considerably increased during the year, but after providing for veterinary inspectors at Manila, Iloilo, and Cebu, only one venterinarian was available for each four provinces and important islands. This made it impossible to cover the territory as thoroughly as was desired; has necessitated responding to calls only where the outbreaks of disease appeared to be serious; and has resulted in some small outbreaks assuming a serious aspect before attention could be given to them.

Not only the veterinarians, but also our agricultural inspectors and assistant agricultural inspectors, have been used in connection with the veterinary control work. Owing to the widespread prevalence of rinderpest, foot-and-mouth disease, and surra, our veterinary force is still too small to satisfactorily handle the work. The appointment of a chief veterinarian and a small increase in the veterinary force have been authorized, and all vacancies will be filled at as early a date as practicable. It is probable that less difficulty will be experienced in securing veterinarians than heretofore, as a number of eligibles are now awaiting appointment.

Three new agricultural inspectors, all of whom are agricultural-college graduates, arrived in Manila in January and February, 1908. The excellent services which these inspectors have rendered emphasizes the desirability of obtaining trained men for this work. During the year four agricultural inspectors have been transferred to positions as farm superintendents, and four additional inspectors have been employed to take their places, all of whom have been given special training in the control of animal diseases.

The clerical force has been materially enlarged, made necessary by the publication of the Philippine Agricultural Review, the growth of our crop-reporting and statistical work, and the large increase in record work due to enlarged field force. A number of transfers and changes have been made, which have resulted in considerable improvement in results accomplished. A large part of the increase has been in the number of native clerks employed. In general, their work is highly satisfactory.

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PUBLICATIONS.

PHILIPPINE AGRICULTURAL REVIEW.

In July, 1907, the director of agriculture, in recommending the publication of a monthly bulletin by this bureau, said:

"It is essential that the farmers throughout the provinces be brought more closely in touch with the work of the bureau of agriculture. This fact is of particular importance in connection with our seed and plant distribution and the control of infective animal diseases. A considerable amount of the work now accomplished by means of circulars, circular letters, and correspondence could be more satisfactorily and thoroughly done through the medium of a monthly publication.

"We are now receiving monthly crop-service reports from more than half the municipalities of the islands. A brief summary of these reports would be of general interest if published regularly every month.

"The further development of the maguey industry, the planting of kapok trees, and other similar lines of work should be systematically and constantly kept before the people. Interest in these questions is easily aroused, but soon dies out unless constantly renewed. This kind of work can not be done thoroughly either by correspondence or by our present system of bulletins."

The first number of the Philippine Agriculture Review was published in January, 1908. This journal is destined primarily to take the place of the press bulletins heretofore issued by this bureau. It is not intended to be a journal of technical nature, but rather a serial publication on general agriculture, to be used as an educational means of reaching the people of the Philippine Islands with the work of the bureau of agriculture. The "Review" is issued in English and Spanish, and is circulated free of charge in the Philippine Islands.

The January number of the "Review" was devoted entirely to the annual report of the bureau for the preceding fiscal year. Subsequent numbers have contained articles on various subjects of general agricultural interest, reports on agricultural conditions in the provinces and in other tropical countries, crop reports, statistics, etc.

On June 30, 1908, the mailing list of the "Review" was: English, 2,555; Spanish, 5,431. This publication is sent to all provincial governors and treasurers, division superintendents of schools, municipal presidents, crop reporters, supervising teachers, agricultural colleges and experiment stations in the United States, and to a selected list of agricultural periodicals, libraries, American consuls, botanical gardens, and private individuals.

Large numbers of requests for the "Review" have been received, and although great care has been taken in making up the mailing list, the entire Spanish editions of Nos. 1, 2, and 3 have been exhausted. The question of charging a nominal subscription price for the "Review" is one that will have to be taken up in the near future.

BULLETINS AND CIRCULARS.

The publication and wide distribution of the Philippine Agricultural Review have resulted in a largely increased demand for publications on agricultural subjects. We have issued during the year one farmers' bulletin, one press bulletin, and one printed circular. A large amount of the material formerly published in bulletins and circulars can now be published in the "Review." It will probably be desirable, however, to continue our series of farmers' bulletins and popular bulletins.

During the year the following publications have been issued:

Title.	Author.	Issued.	Language.
Farmers' Bulletin No. 15, "Tobacco Growing in the Philippines."	G. E. Nesom	Dec. 11, 1907	English.
Do	do	Jan. 13, 1908	Spanish.
Do	do	Jan. 30, 1908	Ibanag.
Do	do	Jan. 31, 1908	Ilocano.
Press Bulletin No. 11, "Seed Distribution, Need of Diversified Farming, etc."	G. E. Nesom	Oct. 28, 1907	English.
Do	do	Dec. 11, 1907	Spanish.
Circular:			
Kapok	H. T. Edwards	Nov. 5, 1907	English.
Do	do	Nov. 6, 1907	Spanish.
Do	do	Jan. 7, 1908	Cebuano.
Do	do	Jan. 9, 1908	Visayan.
Do	do	Jan. 29, 1908	Ilocano.
Do	do	do	Tagalog.

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Philippine Agricultural Review, Volume I.

When issued.	Contents.
No. 1 (January)	Annual report of the bureau of agriculture for the fiscal year ended June 30, 1907.
No. 2 (February)	Forage investigations in the Philippine Islands, agricultural progress in Porto Rico, agricultural conditions in the province of Nueva Ecija, hog cholera, school gardening in the province of Union, commercial orange production in the Philippine Islands, the world's rice crop, range of prices of Philippine agricultural products.
No. 3 (March)	Rinderpest, surra, foot-and-mouth disease, anthrax, hog cholera, glanders, hemorrhagic septicemia, ulcerative lymphangitis, methods of disinfecting.
No. 4 (April)	Manioc or cassava, poultry raising, La Granja Modelo, February crop reports, range of prices of Philippine agricultural products.
No. 5 (May)	The animal-disease problem, bureau of agriculture General Order No. 10, report on the animal industry of Indo-China, locusts, bud rot of the cocoanut, crop-reporting service, agricultural notes from April crop reports, range of prices of Philippine agricultural products.
No. 6 (June)	Agriculture in the Hawaiian Islands (Part I), water and the soil, some information on silkworm culture in the Philippine Islands, agricultural opportunities in the province of Palawan, agricultural notes, crops planted and harvested and condition of same, range of prices of Philippine agricultural products.

AGRICULTURAL EXTENSION WORK.

OUTLINE OF WORK.

The principal object in view in organizing this work was to bring the people of the islands more closely in touch with that of the bureau of agriculture. An attempt has been made to render the work practical by dealing with everyday subjects, such as the treatment of rinderpest and other animal diseases, methods of checking the spread thereof, the advantages of planting maguey and other crops, etc.

The superintendent of agricultural extension work has also brought to the attention of the people certain lines of work of this bureau, such as the distributing of seeds and plants, the results obtained at our experiment stations, and the use of antirinderpest serum.

During the year the superintendent has made investigations in the provinces of Batangas, Bulacan, Negros Occidental, Neuva Ecija, and Tarlac. In each meetings were held for the purpose of explaining to the people the work of this bureau along the lines above mentioned.

In each municipality visited the superintendent, after having obtained information regarding soil conditions, irrigation facilities, agricultural products, condition of live stock, etc., has offered such suggestions for the improvement of agricultural affairs as the situation called for.

BATANGAS.

In September, 1907, an investigation was made in the province of Batangas, in the course of which the towns of Santo Tomas, Tanauan, Lipa, Bauan, Taal, Lemery, Calaca, Balayan, Nasugbu, and Batangas were visited. Rinderpest was found in all of these towns, conditions being most severe at Bauan. It was noted in several of these places that the disease was first reported among animals arriving from the Visayan Islands.

The large number of people interviewed in these towns expressed appreciation of the good results obtained through inoculation with antirinderpest serum, and appeared to be convinced of the efficacy thereof. Both municipal officials and owners of live stock requested that larger quantities of serum be sent to the province, so that more extensive inoculations might be made.

NUEVA ECIJA.

In December, 1907, an investigation was made in the province of Nueva Ecija and the towns of Cabanatuan, Bongabon, Pantabangan, Carrancalan, Licab, Talavera, Gapan, San Antonio, Aliaga, San Jose, San Juan de Guimba, and Cuyapo were visited. In practically all of the towns visited in this province it was found that the rice crop had suffered severely from drought, the shortage being in some places from 70 to 90 per cent. No diseases among live stock were found.

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In many of the towns visited crops, such as cocoanuts, cacao, coffee, kapok, maguey, and cotton might be advantageously grown. This fact was brought to the attention of the farmers and property owners, and all were advised to encourage the cultivation of these crops.

BULACAN.

During January, 1908, an investigation was made of agricultural conditions, which, like Nueva Ecija, suffered great loss in the rice crop by reason of drought.

It was made especially for the purpose of determining the irrigation facilities. It was recommended that a canal be opened in the Rio Grande of Pampanga for the purpose of irrigating rice lands in the municipalities of Hagonoy and Calumpit, and it was estimated that if opened the production of rice in these towns could be increased by at least 20 per cent.

NEGROS OCCIDENTAL.

This investigation was made during February, 1908. Among the towns visited were Pontevedra, Jinigaran, Binalbagan, Jimamaylan, Cabancalan, Ilog, Isabela, and La Carlota. It was made for the special purpose of learning the existing conditions with regard to the prevalence of rinderpest and of furnishing the people with information regarding the use of antirinderpest serum.

In all of the municipalities visited meetings were held, and the people were told of the successful results obtained in other provinces in fighting rinderpest by means of inoculation and quarantine. The impression made on the people was most satisfactory, and it is believed that a large number of the "hacienderos" of this province are now convinced of the value of this serum. Many of them requested the superintendent of agricultural extension work to make arrangements for the inoculation of their animals and offered to pay the cost of same.

TARLAC.

This investigation was made in May, 1908. Among the towns visited were Victoria, Pura, Paniqui, Camiling, Moncada, Capas, Concepcion, and Bamban.

The principal products are rice, sugar cane, and corn, while cocoanuts, ilang-ilang, and maguey are cultivated to a limited extent. The amount of rice harvested last December and January was small, the shortage being estimated at about 50 per cent, due both to drought and excessive rain. Corn and sugar cane were found to be doing well, with prospects of a considerable crop.

Little disease among live stock was reported, there being only a few cases of foot-and-mouth disease and rinderpest.

CROP REPORTING AND STATISTICS.

STATUS OF WORK.

The crop reporting and statistical work of the bureau was organized during the latter part of 1906. The proposed work, as stated in our last annual report, was:

"To obtain regular and reliable information relative to crops and live stock in all parts of the islands, to summarize and tabulate this information so that it may be in the highest degree useful and available, and to publish such part of the information received as may seem desirable."

On June 30, 1907, a corps of 370 municipal reporters had been organized and 1,628 monthly crop reports had been received. No attempt had been made to tabulate any statistics or to publish any crop-reporting material.

During the present year the number of crop reporters has been substantially increased, and the quality and regularity of the monthly reports have been improved. The large amount of data received has been tabulated and made available for ready reference, and the regular publication of crop reporting and statistical material in the Philippine Agricultural Review has been effected.

COMPILATION OF DATA.

Data of the kind received in crop reports, in order to be of any practical value, must be so tabulated and arranged as to be available on short notice.

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The necessary forms for tabulation were received early in the year and within about two months the work of tabulating the statistics received was brought up to date.

PUBLICATION OF CROP REPORTS.

The publication of data received is an essential part of the crop-reporting service, and one of the objects in publishing the Philippine Agricultural Review was to furnish a means of disseminating among the people the information obtained through the medium of the crop-reporting service. There is now published in each number thereof a tabulated statement showing the range of prices of the more important Philippine crops. In the April number, in order to give the people a clear idea of the crop-reporting work, we published a brief summary showing weather conditions, crops planted and harvested, etc., during February in all of the municipalities from which crop reports had been received. Notes of a similar nature, but in a more condensed form, were published in the May number. The June number contained brief notes on agricultural conditions and also a tabulated statement showing the crops planted and harvested and the condition of growing crops during May.

QUALITY OF THE REPORTS.

There has been considerable improvement during the year in the quality of the crop reports received. It is believed that their publication will result in still further improvement, as when a subscriber of the Review reads the crop reports published therein and notes that the statements relative to crops in his municipality are not correct, it is probable that in many cases he will consult with the bureau's correspondent in that municipality and offer suggestions as to how reports may be improved. Futhermore, crop reporters themselves, when they learn that their reports are being published and read by persons in their own municipality, will endeavor to submit reports as free from errors as possible.

SPECIAL REPORTS.

Accompanying the regular monthly report blanks there have been sent out at frequent intervals blank forms on special subjects, such as the mulberry, agricultural machinery, the mango, etc., to be filled out and returned by the reporters. These special reports have been compiled and furnish considerable valuable information.

RECEIPT OF REPORTS.

One drawback to this service is the infrequency of mail communication between Manila and many places in the islands, some places receiving mail but once and others only twice a month. It often happens, therefore, that reports are received several weeks or a month late. This difficulty has been overcome to some extent by sending out report blanks to the more distant provinces considerably in advance of those sent to provinces located near Manila.

SUCCESS OF SERVICE.

The practicability of organizing and carrying on a crop-reporting service in the Philippine Islands has been fully demonstrated. The majority of the municipal reporters have never done any work of this character before, and various other obstacles of more or less serious nature have had to be overcome. Considering these facts, the results obtained have been very satisfactory.

The municipal elections which occurred in the early part of the year seriously interfered with the crop-reporting work. The majority of our crop reporters are municipal presidents, many of whom were not reelected. In a large number of cases the ex-presidents failed to inform their successors in regard to the crop-reporting work, and although the bureau continued to send blank forms every month they were not filled in and returned as formerly. It was some time before the true state of affairs became apparent, and then steps were taken to immediately remedy the difficulty. Letters were sent to the municipalities from which reports were not being received, explaining the nature of the crop-reporting service and asking for the hearty cooperation of the officials. Letters were also sent to the provincial governors and division superintendents of schools, requesting that they correspond with those municipalities from which reports were not being received, with a view to securing

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persons to act as crop reporters. It is gratifying to note that correspondents have been obtained in many of these municipalities, and a larger number of reports are now being received than during any previous time since the organization of the crop-reporting service.

AGRICULTURAL EXPLORATIONS.

It has been found necessary to detail Mr. Harold Cuzner, agricultural explorer, to the work of seed and plant introduction and distribution during the greater part of the year. The exploration work in consequence has been limited to short trips through the provinces near Manila.

INVESTIGATIONS IN THE PROVINCE OF BATANGAS.

On December 12, 1907, an inspection trip was made through the provinces of La Laguna and Batangas. Special attention was paid thereon to leguminous plants that might be useful either for food or for the production of forage. Seeds of Atylosia scarabæoides, Dolichas falcatus, Uraria lagopdivide, and Phaseolus lunatus were collected beside several varieties of patani. Of these the Alysicarpus vaginalis (mani manihan) is probably the most promising, because it is readily eaten by animals and is often found making a considerable growth in cogon. The seed, however, seems to be difficult to germinate, and only a few plants were obtained from those collected.

The orange districts in the neighborhood of Tanuan were visited and many of the trees were found to be suffering from the attack of an insect, which was working under the bark. In this district oranges are propagated from seed, with little or no attempt at selection. Cultivation, pruning, and manuring of the trees is entirely neglected. A very bad result of the lack of pruning is that the dead wood becomes infected with white ants and other borers that work their way down to the healthy wood. It was stated by several owners of groves that when the trees are in full bearing they yield from 2,000 to 3,000 oranges, valued at from ₱4 to ₱5 per 1,000. Seedling orange trees are sold in the neighborhood at ₱10 per 1,000, and many small plantations are being set out.

At a barrio near San Jose a plantation of Liberian coffee was seen, and although the trees had received little or no attention and were planted very closely, they seemed healthy and were bearing a good crop of berries. This variety of coffee, however, does not seem to find much favor on account of the difficulty in removing the hull. These coffee trees were said to be about 15 years old and to have been in bearing for the last ten years.

INVESTIGATION OF SUGAR-CANE DISEASE.

During April, 1907, the agricultural explorer, in company with Doctor Robinson of the bureau of science, made a trip to Santa Rosa, La Laguna, to investigate a sugar-cane disease reported from that neighborhood. The field in question was a crop of rattoons and almost every plant was found to be badly infected with "smut" (Ostilago saccarii). Owing to the nature of this disease, there is no remedy that can be applied to the infected plants. It was recommended that all the infected plants be cut and burned in order to prevent a spread of the infection; also that the land be planted with another crop in order to get rid of spores that were in the soil. The owner agreed to do this and a sufficient quantity of Carolina Golden rice with which to sow the field was furnishd him. An investigation of the sugar-cane districts between Santa Rosa and Los Baños was then made to determine the extent of the disease, but no other infected fields were found.

In order to find out whether this disease existed in other localities, a circular letter was sent out to a large number of correspondents of the bureau, giving a description of the diseased plants and inquiring as to the existence of the disease in each locality. The reports received with two exceptions, one from the town of Sampaloc, Tayabas, and the other from Manapla, Occidental Negros, were negative. The disease reported from Tayabas, on further investigation, proved to be of an entirely different nature and not at all dangerous. That reported from Occidental Negros was said to be very limited in extent, affecting only one plant in a thousand. If it exists at all, however, in this important sugar-producing province, it should be carefully watched, as in time it is liable to become epidemic.

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STEAM PLOWING AND MACHINERY INVESTIGATIONS.

PLOWS.

The extra heavy V-shaped plows mentioned in the last annual report have been successful in turning all kinds of land, no matter how hard or foul with grass and weeds. Owing to the fact that they throw the dirt in both directions, thus leaving a ridge and a furrow at each passage, necessitating considerable work with disk harrows to level the land, this type was abandoned temporarily and another constructed on the general plan of the ordinary disk plow purchased in the market. This new plow, however, is made of extra-heavy material and so reenforced as to withstand the strain put upon it by cutting cogon sod, the roots of young trees, etc.

It was a decided success, doing good work on moist as well as on cogon sod or old land. It will replow the land any number of times, a thing which the V-shaped plow mentioned above will not do, but it will not plow hard, dry land as well as the V-shaped. It leaves the land level and in good condition, and if a 5-foot disk harrow is hitched on behind the plow, work equal to two plowings can be done at one passage of the engine.

The ordinary disk plow manufactured in the United States for use on sod land is not adapted to work in these islands owing to its lightness of construction. It is therefore recommended that the attention of plow manufacturers be called to the construction and work of this plow and some reliable firm induced to take up the manufacture of the same. If this is done, when plows are ordered hereafter we will have some assurance of their success with the many objections with regard to breakage, etc., removed.

ENGINES.

This bureau now has on hand one 35-horsepower engine, one 18-horsepower engine, one 22-horsepower engine, and one 22-horsepower Hart-Parr petroleum-burning engine.

As mentioned in our last report, the friar lands as they now stand are not well adapted to the use of steam plowing engines, because of the fact that the fields are small, separated as a rule by ditches or embankments, and grown up with cogon, talahib, and trees of various kinds. The rice dikes and old cane ridges also interfere materially with the operation of the steam engine, as in crossing these it is necessary to reduce speed. The ground being uneven, it is frequently necessary to plow in small patches, owing to the fact that a part of the ground may be too wet while the remainder of the field is in proper condition for plowing. These small fields necessitate frequent turning of the engine. which also consumes time.

OPERATIONS.

The 35-horsepower engine, 12-disk plow, 18-horsepower engine, and 6-disk plow were taken to the Santa Rosa estate on October 22, 1907, and used there until February 8, 1908, at which time the plowing operations ceased on account of the opening of the sugar-grinding season.

The following is a detailed statement of the work performed by the 35-horsepower engine and 12-disk plow:

Actual time worked ---------- days	28
Amount of land plowed ---------- hectares	72.2389
Value of 28.3 tons of coal, at ₱20 per ton ----------	₱566.66
Wages of 1 engineer and 2 firemen ----------	227.64
Repairs and oil (actual days worked) ----------	112.00
Total cost ----------	906.30
Average area plowed per day ---------- hectares	2.58
Average amount of coal consumed per day ---------- tons	1.01
Cost of fuel per hectare ----------	₱7.84
Cost of wages, oil, and repairs, per hectare ----------	4.70
Total cost per hectare ----------	12.54

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To this must be added the wages of three laborers furnished by the landowner.

The fact that only twenty-eight days of actual work was done with this engine and plow was largely due to weather conditions.

The following is a record of the 18-horsepower engine and 6-disk plow during the same period:

Actual time worked ——— days	37.50
Amount of land plowed ——— hectares	67.50
Value of 19 tons of coal, at ₱20 per ton	₱380.00
Wages of 1 engineer and 2 firemen	277.50
Repairs and oil (estimated)	90.00
Total cost	747.50
Average area plowed per day ——— hectares	1.72
Average amount of coal consumed per day ——— ton	.50
Cost of fuel per hectare	₱5.80
Cost of wages, oil, and repairs, per hectare	5.44
Total cost per hectare	11.24

To this must be added the wages of one laborer furnished by the landowner.

To give an idea of what the 18-horsepower engine and 6-disk plow can do on a straight run of five days, the following tabulated statement is submitted:

Amount of land plowed ——— hectares	19
Wages of engineer and two firemen	₱39.50
Wages of 6 laborers, pumping water and cutting wood, at ₱0.60 per day for five days	18.00
Oil, at ₱1 per day	5.00
Total cost	62.50
Average amount of land plowed per day ——— hectares	3.80
Average cost per hectare	₱3.25

It will be noticed that the average area plowed per day by the 35-horsepower engine and 12-disk plow was much greater than that by the 18-horsepower and 6-disk plow, but that the cost of plowing is less in the case of the 18-horsepower engine and 6-disk plow, the greater cost of the 35-horsepower engine and 12-disk plow being due largely to the fact that more coal was consumed in operating. If wood could have been substituted for coal and furnished by the landowner, the cost of plowing would have been about the same in both cases. It is believed from the figures given in the last table that the smaller engine and plow will do the work at much less cost, provided many obstructions are removed, as will be mentioned later in this report.

The cost of plowing shown in the last table could have been materially reduced if water could have been secured near at hand. It was necessary in this case to employ three laborers to pump water from a deep well.

Much of the variation in the cost of plowing, as given from time to time, is due to the different conditions with which the plows have to contend in the different fields plowed. Some fields will be comparatively large, level, and well suited to steam plowing, while others will be small, difficult to reach, probably wet in places, and perhaps covered with rice dikes or old cane ridges, which in many cases run at right angles to the direction of the plow, necessitating a reduction in speed and a waste of valuable time. Furthermore, the fields may be filled with ant mounds, hidden stumps, small trees, etc., all of which should be removed before taking the plow to the field.

The heavy engine is much more expensive to move from field to field, its excessive weight causing it to sink in soft places. The large plow will also come in contact with more stumps and roots, causing a greater percentage of breakage than the small one. This breakage is charged to the land plowed under the head of "repairs." Rough land causes more damage to the heavy engine, owing to the fact that the bolts loosen on account of the jar in passing over the obstructions. The smaller engine is much more economical, owing to the ease with which it can be turned around in small fields.

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The farmer who owns a steam plow has a decided advantage over the government in being able to use his labor at other work on the farm when not employed in steam plowing. The government is required to pay its men during bad weather and while the engine is laid up on account of breakages, etc.

The 22-horsepower engine and the 8-disk V-shaped plow were taken to the Imus estate the latter part of March, but owing to the lateness of the season and to the fact that the land had not been properly prepared very little was accomplished.

The 22-horsepower Hart-Parr petroleum-burning engine was taken to the Alabang stock farm the latter part of May. This being a new engine, it was necessary to do some experimenting before any steady work could be undertaken. It was therefore used for hauling and plowing for several days; the rains, however, interfered with any extensive operations. A short test was made of the amount of fuel consumed, which seemed to show that it consumed about 3½ gallons of petroleum per hour. The test was satisfactory in every way, both as to hauling and plowing. While this engine weighs 9½ tons, it is very easy to handle on ordinary sod land. All indications point to this as the coming traction engine for use in those districts where fuel and water are difficult to obtain.

PREPARATION OF FIELDS.

Many farmers desiring to have steam plowing done still neglect to have the fields properly prepared before asking that the plows be sent to their farms. The labor furnished by the landowner to supply fuel and water for the engine is, in many cases, very unsatisfactory.

Many farmers seem to think that the plow is a stump puller, and instead of grubbing up trees 10 inches below the surface of the ground, as they have been instructed to do, will cut them off even with the surface. The engineer is unable to see these stumps and broken disks are the result, causing delay in securing castings from Manila, to say nothing of the expense of same. Some farmers, after six months' notice, wait until the plow arrives before they begin grubbing stumps and trees, leveling ant mounds, etc. It is only fair to say, however, that others give every assistance possible in the work by having the land properly prepared and fuel on the ground.

While it is not the policy of this bureau to recommend burning any organic matter off the soil, we find it necessary to have the tall grass which grows on these semiwild lands burned or otherwise removed in order that the engineer may see the ant mounds, ditches, and other uneven places sufficiently in advance to avoid them. Possibly the easiest way to do this is to pass a roller over it at the end of the rainy season, crushing the grass down so that it burns completely when fired.

FUEL.

In regard to fuel, it is recommended that no more coal be used in steam plow work, and that every farmer who desires plowing done have wood cut at least six months in advance of the plowing season. In many cases "madre de cacao" can be secured in close proximity to the field, and if this wood is cut a sufficient length of time before the plowing season it makes a better and very much cheaper fuel than coal. Its use will result in a saving of cost in plowing of from ₱4 to ₱6 per hectare.

FIBER MACHINERY.

The Pioneer maguey machine referred to in our last report was experimented with and five improvements made thereon. After these were completed a number of experimental tests were made in cleaning fiber, the results of which were fairly successful. It cleaned an excellent quality of fiber, but the quantity obtained in a given length of time was not entirely satisfactory. It was later sent to Vigan, in the province of Ilocos Sur, where it was installed in the trade school. The following report relative to its use in Vigan has been furnished by the division superintendent of schools in Ilocos Sur:

"The maguey machine was sent to Vigan last January. It was set up and began work on the 17th of that month. It continued work until the 19th of February. During this period the machine ran one hundred and forty hours on twenty-two different days and stripped 117,000 leaves, an average of 835 leaves per hour. This resulted in 1,572 pounds of clean fiber. The labor, exclusive of the man in charge, amounted to ₱42.45, and the fuel for the engine cost ₱59. The per cent of fiber obtained is 4, and the waste amounted to 95 per cent.

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"The principal maguey growers of Ilocos Sur brought leaves to be stripped and saw the machine in operation. It demonstrated to them that a machine can strip maguey and strip it successfully. In this respect the experiment has been a success. But the capacity of the machine is too small to make it a commercial success. In this respect the machine has been a failure."

One of the smaller Prieto fiber-cleaning machines has been received from the United States, but has not as yet been put into operation.

CORN GRINDING.

A Kelly duplex feed-grinding mill ordered by the bureau has been at the Singalong experiment station during the year. It has a capacity for grinding about 18 cavans of ear corn per hour and is operated with an 8-horsepower Altman-Taylor portable steam engine. We have ground a total of 170,538 pounds of corn, sending some to the stock farms at Alabang and Trinidad and some to the serum laboratory at San Lazaro. A test to determine the cost of grinding ear corn with this mill was made on June 1, 1908, with the following results:

Time in operation	3 hours, 5 minutes.
Weight of corn and cob meal	6,137 pounds.
Labor used:	
Four men, at 10 cents per hour	₱1.23
Two men, at 12½ cents per hour	.77
Coal used:	
436 pounds, at 80 cents per hundredweight	3.48
Total expense of grinding 6,137 pounds	5.48

The cost, as shown by this test, without figuring interest on capital invested and wear of machinery, was a little more than 9 cents per hundredweight. The conditions under which this test was made were, however, very favorable, and the run made was an unusually good one.

PUMP AND BOILER.

An upright boiler and a steam pump have been installed at the Alabang stock farm to pump water for irrigation and stock use; the steam hay press also was taken to the same station and used in baling straw purchased for the use of the stock during the rainy season.

SMALL PLOWS.

An assortment of small plows cutting from 5 to 6½ inches was purchased with a view of trying them in the various kinds of soils, and those found to work well in certain soils will be recommended to firms importing implements. There is a large demand for good small plows which one vaca or carabao can pull. The kinds that have been imported heretofore have not been adapted to conditions existing here. When the right kinds of plows are imported they will find ready sale and do a much better class of work than the native plow now in general use in the islands.

DIVISION OF PLANT INDUSTRY.

This division includes all general plant investigation, seed distribution, laboratory and field test of seeds, and the work at the experiment stations located as follows:

Singalong.—In the southern part of Manila, on sandy soil at sea level.

Baguio.—At Baguio, Benguet Province, at an elevation of 1,500 meters, on drift soil, rather poor in plant food. There are also two substations located on the west side of the mountain range between Baguio and sea level, for the purpose of testing crops at various altitudes.

Lamao.—On Lamao forest reserve in Bataan Province. This station is also at sea level. The soil is mixed sand and clay of average fertility.

La Granja Moleda.—The old Spanish experiment station near La Carlota, Occidental Negros, devoted largely to growing cane.

Lipa.—Near Lipa, Batangas Province, in the coffee district. Nothing but coffee is grown at this station.

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PLANT INVESTIGATIONS.

Abaca.—Work during the past year with this fibrous plant has been limited to the propagation from seeds, and, owing to the difficulties experienced in securing good, viable seed for planting, results have not been especially favorable. Some plantings failed entirely. One lot, coming to us under the variety name of Large Sorsogon, germinated nicely, but proved to be not abaca but "wild banana," a practically worthless species found growing in waste places and without cultivation in many parts of the hemp-producing districts.

The two small plantings at Singalong that proved successful have furnished about 1,500 seedlings which are now growing nicely under shade. Plants from the first planting, made in July, 1907, stand from 1.3 meters to 2 meters in height, the measurements being taken to the top of the erect-growing leaves. There is now an average of more than three suckers springing from the roots of these plants.

"Abaca blanca" is the name of a variety coming from Casiguran, Sorsogon, and planted in the seed bed November 6, 1907. These were grown under shade, and on March 26, 1908, while not nearly so large as those from the early planting, are beginning to sucker.

A similar test was made at Lamao station where, after growing the plants under shade until they were from 18 to 24 centimeters high, they were transplanted to the open field. About 20 per cent of these transplanted plants died from the effect of the exposure. It was noticed that the smaller plants suffered more than the larger. They all made slow growth for the first two months, after which growth was more vigorous and the plants are now very promising. About 3,000 plants are available for distribution from this planting. At La Granja, Occidental Negros, plantings were made in a similar way and with the same kind of seed. From 0.75 kilogram of seed 2,000 plants are available for distribution.

An attempt was also made at this station to grow abaca from seed by sowing it between rows of growing cane, but it was found that when the cane was removed the young plants died from exposure to the sun.

From experiments so far it is deemed advisable that in case it is desired to grow abaca from seed that a shade be constructed of bamboo so as to give about one-half shade to the plants growing under it. With a thoroughly prepared seed bed and with proper attention as to watering, etc., plants can be grown very successfully in this way and be ready for transplanting in from four to six months.

Considerable difficulty has been experienced in securing seed that would germinate. Germination tests of various batches of seed received range from 2 to 80 per cent. Care should be taken not to secure seed from unripe plants as the percentage of germination is usually very low.

Maguey.—Work with maguey during the past year has been confined largely to the distribution of sucker and pole plants, both native and Hawaiian. Interest in this crop continues unabated, and requests for plants have ranged from 1 to 30,000 from individuals and governors of provinces. More than two-thirds of the plants distributed have been what is known as pole plants.

About 67,000 of these pole plants, arriving from Honolulu in a very dry, wilted condition, were planted in a nursery at Singalong in July, 1907, in order to ascertain their probable growth during the first year. They were set in rows of 50 centimeters apart with 24 centimeters between plants in the row and occupied a total area of 7,000 square meters. On June 30, 1908, many had reached the height of from 42 to 66 centimeters, and some are producing suckers. They have been distributed as the other plants.

The total number of maguey plants distributed during the year is given in the table of seed distribution elsewhere in this report.

Of native pole plants 350,000 were grown in nursery at the Lamao forest reserve. A large percentage of them have been distributed during the past year, but we still have on hand for distribution at this place something over 150,000.

A field containing 2.5 hectares was planted in both native and Hawaiian maguey at Lamao station in order to test the feasibility of planting it among the stumps after the trees and brush had been removed by cutting and burning. These have made normal growth, some Hawaiian plants having leaves 1.3 meters long, but require considerable expense in cutting down the brush and weeds each season.

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The field of two hectares of Hawaiian maguey, planted on the high, rolling land at La Granja, Occidental Negros, October 27, 1906, has developed very uniformly, producing leaves 1 meter long, and in another year will be ready for cleaning tests. It is estimated that 10,000 sucker plants can be obtained from this field now for distribution. The area of maguey is gradually being extended at this farm.

The 336,000 native pole plants from Ilocos Norte, set in nursery at La Granja on November 6, 1907, are now ready for distribution.

Kapok.—During the past year kapok seed has been planted at Singalong, Lamao, and La Granja for the purpose of securing young trees for distribution. There are now available for such purpose at the various experiment stations 2,500,000 seedling trees. Although we have advertised that these trees are available for distribution, very few requests have been received for seedlings.

Experiments have been begun at Lamao and Alabang to show the relative value of the various methods of securing kapok trees, namely, from the seedlings and truncheons. As it will be some years before they will come into bearing, no report can be made as to the probable value of either method.

Data have been collected by representatives of the bureau in various provinces on the yield of kapok trees, both wild and cultivated. Very few reports show that they are cultivated to any extent at all, most of the reports being on those growing either wild or in fence rows. A total of 448 trees have been reported upon, but as the figures cover a period of only 1 year the work will be continued for at least 2 years longer.

Rubber.—Of rubber plants, 4 species are in cultivation at Singalong. They are Hevia Braziliensis, Castiloa elastica, Manihot glaziovii, and Criptostagia grandiflora, the last-mentioned species being a wild native vine. Four Hevea Braziliensis, or Para rubber seedlings planted almost four years ago were measured on June 2, 1908. The circumferences were taken 1 meter above the ground. Girth measurements are given in centimeters and height in meters.

	Circumference, centimeters.	Height, meters.
No. 1	25	6.0
No. 2	28	7.0
No. 3	27	6.6
No. 4	31	7.0

Of Castilloa elastica 5 seedlings planted at the same time were also measured on the above date in the same manner as the Para rubber and showed the following dimensions:

	Circumference, centimeters.	Height, meters.
No. 1	37	5.0
No. 2	36	4.6
No. 3	45	5.3
No. 4	33	4.0
No. 5 (1)	28	4.0
No. 5 (2)	30	4.0

These trees have not rooted well and consequently have blown down during heavy typhoons. This is not surprising, however, when it is remembered that this rubber requires certain elevation above sea level and that the elevation at which it is growing here is about 1 meter. During the past year these trees have produced seed.

About 100 trees of Ceara rubber, ranging in height from 10 to 12 meters, now growing at La Granja experiment station in Occidental Negros, are producing seeds in large quantities. Many thousand seeds have been distributed to parties interested in this species of rubber plant.

The area is being extended by planting truncheons and seed, so that in a short time sufficient area will be secured to make a test of this rubber on a commercial basis.

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FIELD CROPS.

Corn.—Seed of a native white variety was obtained from Batangas and planted at Singalong January 6, 1908, with the object of determining its yield of green fodder. The seed proved weak, and on January 22 only about 20 per cent had sprouted. Replanting was resorted to and a fair stand obtained. The stalks grew quickly and attained a height of about 2.15 meters. It made excellent fodder, many small ears adding to its value. The ears filled out fairly well, but were seriously damaged by a small cutworm (lepidopterous) which resembles the cotton boll. The crop was cut March 18 and amounted to 2,492 kilos, equivalent to 14,459 kilos per hectare.

A small planting of "Longfellow" variety, seed of which was introduced from the United States, proved a failure. Stalk development was very weak, and the small amount of corn produced was light, chaffy, and of very poor quality.

Seed of the large Mexican June corn recently introduced from the United States and sent to this station for trial was planted and the corn is now growing nicely.

At Lamao a trial test was made of "Longfellow" in comparison with native corn grown in the vicinity of the Lamao Forest Reserve. The "Longfellow" came in flower some two weeks in advance of the native variety and ripened in seventy-two days. The yield was comparatively small, but promising. At this station a test was also made of a variety of sweet corn known as "Sanford." This does not have the appearance of sweet corn, but seems to carry more sugar than the ordinary field corn and is quite valuable for table use. The ears are quite long, cylindrical, filling out well toward the end. This is perhaps the most promising variety of sweet corn tested at this station so far. It matured in seventy-one days. Enough seed was saved of this to plant quite a large area the coming season, in order that we may have seed for distribution.

A test was made of "Early Crosby" sweet corn at La Carlota to determine its value as table corn. The development was very poor, and no ears of sufficient size to be of use were produced. This is probably due to the fact that sweet corn is native of cold climate and does not do well where the temperature is high during the early period of growth.

A test of "Early Crosby," made at Sablan, a substation of Baguio, located at an elevation of 600 meters, gave excellent results. The corn grown was in every way equal to that grown in the United States.

Alfalfa.—Small plats, 2 by 10 meters, of English and Turkestan alfalfa were sown at Singalong in December, 1907, and have produced two good cuttings. Of inoculated soil 10 pounds, which had been introduced from the United States, was worked into the ground at the time of seeding and resulted in the development of an abundance of large nodules upon the roots of the young plants. Growth was rapid, but, while the plants increased in height, they showed a decided weakness of the stem, a defect which caused much of the first crop to lodge. Blossoms were very sparsely borne. The number of plants in bloom at any one time did not exceed 3 per cent of the stand, though cutting was delayed more than eight weeks after the first flowers appeared. The few seeds that set failed to mature. Conclusions as to the results of the trial can not be drawn until the effects of wet weather upon the crop are learned. Previous experiments have given considerable encouragement during the dry period, but utterly failed upon the advent of wet weather.

Alfalfa has been grown at Baguio for some years in an experimental way, using seed from various sources. Although no inoculation was given to the soil, the plants produced a few nodules, but the results as a whole have not been promising. They would grow well for short periods and then seem to die out. A few blooms have appeared on the plants, but so far no seeds have been secured.

A small plat was planted in alfalfa at Alabang on stiff clay soil, but the plants did not seem to thrive well, although the land was inoculated with soil obtained from California. They soon died out and the plat was overgrown with grass and weeds.

Sunn hemp.—Tests made with this legume (*Crotalaria juncia*) have developed some interesting facts. Plants grown from a few seeds planted in drills October 23, 1907, attracted attention on account of their prolific seeding habits, and a more extensive planting was planned.

On February 4, 1908, a plat measuring 364.5 square meters was planted in rows 0.5 of a meter apart. The crop was produced with just one hoeing and one irrigation, which, from later appearances, was unnecessary. Cutting was

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completed May 20, 1908, and a yield of seed secured equal to 2,395 kilos per hectare.

A small quantity of seed was run through a corn-grinding mill and the product screened through a close-meshed wire screen, thus separating the smaller particles, or bean meal, from the larger, or bean hulls. The bean meal constitutes 70 and the bean hulls 30 per cent of the total weight. Samples furnished the bureau of science showed the following analysis:

	Per cent.
Meal:	
Moisture	9.66
Ash	6.72
Protein	43.86
Nitrogen-free extract	28.06
Crude fiber	7.86
Ether extract	3.84
Hulls:	
Moisture	12.42
Ash	4.88
Protein	9.81
Nitrogen-free extract	54.52
Crude fiber	17.37
Ether extract	1.00

Some of this ground seed was fed to stock in small quantities, but tests have not been sufficiently extensive to justify any positive assertions in regard to its possibilities as a stock feed. Horses did not seem to relish it when fed alone, but when mixed with an equal part of oats or Indian crushed feed they ate it fairly well. Cattle ate the bean meal greedily at first, but seemed to tire of it in 2 or 3 feedings. Bean meal was also fed to hogs at various times and was always eaten readily, but owing to a lack of feed in sufficient quantities no systematic feeding tests have been made.

Cowpeas.—The so-called "Venezuela black bean" has been grown again at Singalong during the past year, and has produced a heavy yield of seed and a rank growth of vine. The planting was made on January 13, and seeds first ripened March 30, just eleven weeks after planting. A native "sitao," or cowpea, was also planted, but it proved less productive, both of seed and vine growth, than the Venezuela black bean. Both cowpeas have been attacked by aphids, which did much damage and at one time threatened to ruin the crop.

Velvet beans.—A small plat of the Lyon velvet bean was planted at Singalong on January 11, 1908, and five months later a crop of seed yielding at the rate of 2,200 kilos per hectare was harvested. These beans are inclosed in a thick, fleshy pod, which, upon reaching maturity, shrivels up and becomes very tough and leathery. A separation of the beans from the pods is effected with difficulty without machinery. In our work with this bean during the present year the crop did not mature until the rains began, and many decayed and were lost from contact with the wet ground. To eliminate dangers from loss through these causes an earlier season of planting is recommended.

An uncultivated black velvet bean was planted at the same time and in the same manner as the Lyon. In vine growth it is decidedly outstripped by the Lyon, but after six months' growth it has failed to set a single flower.

The Florida velvet bean has been used at Alabang as a forage crop only. No attempt has been made to obtain a yield of beans. It has been grown with either sorghum or teosinte in order to make a mixed forage for feeding the live stock. It grows fairly well on this stiff soil and makes a greater amount of green forage per acre than any other leguminous plant.

Native legumes.—A number of native legumes have been collected and tested at Singalong to ascertain their value for forage or cover crops. Those most promising are *Tephrosia luzonensis*, *Indigofera hirsuta*, *Phaseolus semiæctus*, *Crotalaria incana*, and *Abyscicarpus vaginalis*. All of these were found growing in an uncultivated state.

Indigofera, Phaseolus, and Crotalaria were not eaten by horses and cattle. Tephrosia was eaten rather indifferently by both horses and cattle. A marked improvement in the vigor and robustness of this latter plant has been brought about by cultivation. Alyscicarpus, or mani-mani, is the most promising of all the species included in the test. All classes of live stock eat it readily. Growing wild, it springs up among cogon or other weeds and attains a height of

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from 0.75 to 1 meter. At Singalong it has not shown an upright habit of growth, but planted on clean ground it has taken the form of a trailing plant with recumbent stems. It is not only resistant to long-continued drought, but will live through excessively wet periods, even in poorly drained locations, where alfalfa, for example, would undoubtedly be lost. This little plant promises well as a pasture crop, and will probably prove of considerable agricultural value if introduced into general cultivation. Seeds in quantities sufficient for making more extensive plantings of this legume are now available, and it is hoped to continue the work during the coming year.

Guinea grass.—Prior to January 1, 1908, field space and plants in sufficient amounts had not been available for planting a large area in this grass at any one time, and consequently no definite yield tests had been made. About the beginning of the calendar year it was found possible to start a test along this line, and 3,026 square meters were planted at Singalong during the first week in January. The system of planting in rows 1 meter apart and having 0.5 meter between plants in the row was adopted. This method allows plenty of space between the rows for irrigation, horse cultivation, and the application of fertilizers. Four good cuttings have been removed from this field during the first six months after planting.

The following table shows the growing period in days, yield, total expense, and cost per 100 kilos of each crop:

	Growth.	Yield.	Cost.	Cost per 100 kilos.
	Days.	*Kilos.*		
First cutting	66	4,278	₱26.50	₱0.62
Second cutting	42	4,640	18.17	.39
Third cutting	35	8,275	53.15	.64
Fourth cutting	40	4,350	6.22	.14
Total	183	21,543	104.04	.....

The total yield during a period of one hundred and eighty-three days was, as shown in the table, 21,543 kilos, or equivalent to 78 tons, of green grass per hectare.

Another plat containing 2,533 square meters was planted during the first week in April. This crop followed corn and received one light irrigation, but no fertilizer. The crop cut during the first week in June weighed 9,455 kilos, or, otherwise expressed, produced the remarkable yield of 41 tons per hectare during a period of sixty-one days.

Roots of this grass were sent to Baguio about January 1, 1908, and immediately transplanted. Owing to the comparatively poor soil and cold climate, it does not reach its fullest development there, but a few plants set out at Naguilian are doing extremely well, reaching a height of 2 meters and showing every evidence that the grass will grow under conditions existing at that station. At the Lamao forest reserve this grass has proved equally as valuable as it has in Manila.

A few Guinea-grass roots were sent to Alabang in December, 1907, and transplanted on the low, heavy rice land, but it did not succeed under these conditions, owing, probably, to the extreme stiffness of the soil. Later it was transplanted on the hillside, where it gave better results. A sufficient area has not been secured as yet to make tests of the actual yield.

The area devoted to this crop at Singalong has furnished material for liberal feedings of stock, both here and at the serum laboratory, and good results have always followed its use. It is extremely palatable—horses, cattle, goats, hogs, Guinea pigs, and rabbits eating it with relish, and chickens from the near-by barrios have shown a fondness for it by persistently eating off the young, tender blades.

A practical test of the feed value of Guinea grass was made in cooperation with the office of land transportation, quartermaster's department, which extended over a period of two months. Four lots were fed as follows:

(1) Three horses were fed each 7.5 kilos of Guinea grass, 3.1 kilos of hay, and 2 kilos of oats;

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(2) Three horses were fed each 15 kilos of Guinea grass and 4.1 kilos of oats;

(3) Three horses were fed each 5.1 kilos of Guinea grass, 4.2 kilos of hay, and 4.1 kilos of oats; and

(4) One horse was fed Guinea grass only.

The results of this experiment, as reported by that department, are as follows:

(1) The horses showed sluggishness and falling off in weight;

(2) The horses showed sluggishness and seemed to lose weight for the first 10 days, after which they gained in flesh and had a better look and appearance until finally got back to their normal weight;

(3) The horses seemed to do well, showing no signs of weakness or falling off in flesh. They worked full time at heavy draft work; and

(4) For the first 20 days the horse showed weakness and falling off in flesh; bowels in laxative condition, improving later to some extent, although did not seem strong, yet doing the work.

It is evident that the third lot of horses gave the most satisfactory results and made good use of the grass furnished. It must be remembered that in feeding work horses doing heavy work it is necessary that they have a large percentage of dry feed. A horse is not so constituted that he can use large quantities of watery feed and still do heavy work, as can the carabao or bull.

Several feed tests have been made in a small way at Singalong and have proved satisfactory in every way. A small quantity of hay was made from this grass and fed to the ponies used at the station with good results, the ponies eating it with as much relish as they did the best timothy hay.

Our work with Guinea grass during the past year has developed the following concerning its growth and habits under local conditions: It requires rather a high temperature, plenty of sunshine, and a soil that while moist is not too wet. An excessively wet or saturated soil is undesirable, and standing water will soon kill the plants.

Guinea grass has seeded freely during all seasons of the year. The seeds ripen very irregularly, and the first to ripen fall before the others have matured. Many of them will germinate if the grass is cut and cured at the time the first seeds begin to fall. Care should be taken to prevent waste of seeds, which loosen and drop from the panicle as soon as a dry or cured condition of the grass is reached. It is advised that the field be gone over every few days and the ripe heads be cut and saved as they ripen.

This grass has been distributed to all of our experiment stations, and in a very short time the bureau will be able to furnish those who desire a start of this grass with either seeds or roots from these points.

Nearly 70,000 roots have been distributed during the past year to farmers and others interested in the growing of this grass. In fact, the demand has been much greater than we have been able to supply. Some request as many as 20,000 to 30,000 roots at a time, but the bureau with its present supply can furnish only small quantities to individual farmers, which will enable them to get a start of this grass by root division, as it stools rapidly. The area can also be increased rapidly, in a comparatively short time, if it is allowed to go to seed and the seed heads gathered as they ripen, and immediately planted, by thoroughly preparing the seed bed, destroying the weeds, etc., then sowing the seed and raking them in lightly just previous to a rain, or irrigation, if it can be had.

Paspalum dilatatum.—This large water grass grows in low spreading bunches, produces dense masses of succulent root leaves, and is admirably adapted for pasture purposes. A planting at Singalong made from root divisions during the first week in January endured the entire dry season without irrigation. Paspalum dilatatum springs up quickly after harvesting, but since its province is not that of a soiling crop, no regular cuttings have been made.

Teosinte.—A plat 150 square meters in extent was grown at Singalong during the wet season as a test of seed production. This was planted on May 28, 1907, and when cut on November 6 yielded at the rate of 1.166 kilos good, well-matured seed per hectare. In addition to this amount, 35 per cent (by bulk) of the product failed to mature and was thrown away as worthless. On November 16 another planting of 265 square meters was made. The seed of this crop matured almost perfectly and the yield amounted to 1,590 kilos per hectare. Another experiment was conducted with teosinte within the year to determine its value for green forage production. This work was begun on January 7 on an

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area of 852 square meters. The results of this trial are recorded in the following table:

	Time.	Kilos per hectare.
First crop.....days..	69	9,810
Second crop.....do....	43	25,513
Third crop.....do....	29	26,990
Total.....do....	141	62,313

An application of stable manure at the rate of 25 loads per hectare was plowed under at planting, but no fertilizer was used on succeeding crops. On good fertile soil and with plenty of water for irrigation, teosinte will produce a remarkably heavy yield of a very succulent green feed. As compared to Guinea grass, teosinte has produced slightly heavier yields for the first three crops, but at the expiration of that time the stubble has become hard and woody and growth has started reluctantly or failed entirely. On the other hand, Guinea grass has produced large root bunches at this time and will continue to produce heavy yields for many months.

The grass is better liked by stock and is more nutritious than teosinte. The latter has the advantage of being propagated quickly from seed, a feature that not only reduces the expense of planting, but also renders possible the immediate cultivation of large areas in remote places where grass roots are not available.

Rice.—A comparative test of five varieties of mountain rice was conducted at Singalong during the early part of the year. Seed for making the planting was obtained through the courtesy of Governor Knight, of Nueva Vizcaya, consisting of ypotylon, malinga, macan, sinampablo, and pinursiqui. Palay was sown in the seed bed on June 20, 1907, and on July 20 the plants were set permanently in the field. Irrigation was given only at times of seeding and transplanting.

The following table shows the date of harvest, period in days from seeding to harvest, and yield per hectare:

Variety.	Date of harvest.	Days.	Kilos per hectare.
Ypotylon	Dec. 12..	175	1,682
Malinga	do	175	2,482
Macan	Dec. 17..	180	1,752
Sinampablo	Oct. 28..	131	2,000
Pinursiqui	Oct. 25..	128	2,740

Pinursiqui has made the most favorable showing of all varieties represented in the test. Immediately after this variety was harvested a heavy rain fell, causing a second growth of palay to start. This crop matured and was cut on December 17, adding 25 kilos to the original yield, and making the total yield 2,765 kilos per hectare. Ypotylon and malinga were both badly damaged by chickens feeding upon the grain before harvest. Malinga promised well, and it is thought might have surpassed pinursiqui in yield had it not been for the persistent attacks of these fowls. Granting this, however, pinursiqui may still claim the advantages of a short season.

Beets.—Very gratifying results have attended our work with this vegetable at Singalong. Seeds drilled on November 15, 1907, produced nice, large beets in seventy-five day. Many of them weighed as much as 0.5 kilo each; the largest weighed nearly 1 kilo. Bassano's extra early turnip easily surpassed all others in size, uniformity, and productivity. For table use it is perhaps as sweet and tender as any beet grown, but unfortunately it is light red, ringed, or white in color. Lentz and Eclipse made the best showing among the red beets tested. Crimson Globe and Crosby's imported Egyptian did fairly well, but were not equal to Lentz and Eclipse. Egyptian extra early turnip and Detroit dark red turnip are small and, under conditions of the test, did not prove to be

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desirable varieties. Half long blood and long blood red are late maturing varieties of good eating quality and color. Both have long, branching, irregular roots, and can not be classed as fancy beets. Bassano's extra early turnip produced 24 kilos of beet on a row 15.5 meters long; not a large, but a good yield in most sections of the United States.

Cabbage.—A test of varieties of cabbage was made at Singalong, but owing to the fact that seed was not sown until November 14, 1907, this experiment extended into the hot, dry season, and consequently indifferent results followed. Remarkably rapid growth was made during January and the first half of February, but at the time the heads began to form the heated condition of the soil caused the plants to wilt during midday hours and arrested the development of the heads. Frequent irrigations were given at this time with a view to protecting the plants by reducing the intense heat of the soil. The refreshing effect of these irrigations upon the plants was very noticeable. A test in which 40 plants of each variety were set out on January 10, 1908, gave the results recorded in the following table:

Variety.	Number grown.	Number headed.	Total weight.	Weight of largest.
			Kilos.	*Kilos.*
Winningstadt	36	24	10	0.8
Bloomsdale large late flat Dutch	32	25	12	1.0
Landreth's very early	33	27	19	1.4
Bloomsdale early dwarf	32	26	12.8	.9
Reedland's early drumhead	38	26	28.6	2.3
Danish ball head or Holland	21	18	10	.9
Landreth's 100-day	36	27	15.9	1.0
Jersey wakefield	32	27	12.8	1.2
Landreth's earliest savoy	18	13	13.2	1.3
Total	278	213	134.3	.....

This very poor showing can not be taken as illustrative of what may be expected from cabbage culture in Manila. Had this work been begun six weeks earlier the advantages of cooler weather for field growing should have given more favorable results.

Cabbage has also been tested at Lamao, but the plants were destroyed by worms, ants, and other insects, so that no data were secured on the crop grown there.

Sweet potatoes.—Twenty-six tubers of a variety of sweet potatoes were introduced from the southern part of the United States and sent to Singalong on November 6 for planting. Plants propagated from these tubers and planted in the field on November 27 developed a very vigorous vine growth. The tubers, however, were attacked by a small, white, magot-like larva in such numbers as to destroy the entire crop. This curculis *cylas turcipennis*, was identified by the bureau of science's entomologist. It feeds first upon the surface and then bores deeper into the tuber, causing the total destruction of the latter before maturity is reached. Three different plantings on as many different plats have been under observation at the station during the year, and all have been ruined by this borer.

Tomatoes.—A few plants of the Ponderosa variety were grown from seed introduced from California by Doctor Stevens, of Manila. These produce a remarkably vigorous vegetative growth, but remained almost barren of fruit. The few tomatoes that did develop were of superior quality, but the number was small, and it would not be a serious error to report the crop a total failure.

An attempt has also been made to grow tomatoes at the Lamao Experiment Station. The American varieties tested there have made excellent growth of vine, but refused to set fruit, as was mentioned regarding the tomatoes grown at Singalong. After the vines had reached considerable height they were attacked by a fungous disease and destroyed.

Lettuce.—This has been one of the most successful crops grown at Singalong within the year. Seeds of 6 different varieties—Prizehead, Big Boston, Early Curled Simpson, Hanson, Passion, and Salamander—were sown in the seed bed on February 12, 1908. The seedlings were pricked out and potted to 2-inch pots during the last week in February and a week later were planted permanently in the field. Prizehead surpassed all other varieties in the test. Planted 30 centimeters apart in either direction, the plants developed until they inter-

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lapped and completely hid the ground upon which they were grown. The reddish, curled leaves were extremely crisp and tender.

The following varieties were also planted at La Granja: Big Boston, Prizehead, Hanson, Early Curled Simpson, and Passion. After the plants had attained sufficient size they were transplanted into beds similar to the method used at Singalong. At this place Prizehead and Big Boston seemed to do better than the other varieties, yet they did not do as well as Prizehead at Singalong.

At Lamao, Bataan Province, the same varieties were tested as at La Granja and in a similar manner, except that tests were made by planting under half shade and in the open field. About the same space was given as mentioned for the other stations, with the results that under shade conditions "Early Curled Simpson" made a very favorable showing, maturing early and producing large, crisp heads from 33 to 36 centimeters in diameter, more or less compact. "Passion" ranks next in size of head and compactness, although it matures several days later. Under open-field conditions "Big Boston" gave the best results. It seems to withstand the hot sun and matures comparatively early, producing large heads. This is a semicurled variety, and the heads are not as compact as in noncurling varieties. The others gave fairly good results under field conditions.

In this climate lettuce should be planted so as to mature during the cool season, as warm weather tends to make the plants go to seed before the head has fully developed.

FRUITS.

Avocado.—There are several fairly thrifty trees of the alligator pear growing on the Singalong station grounds. These have grown and appeared vigorous and healthy throughout the year. The tree that bloomed last year flowered profusely again during the past season, but again it failed to set fruit. Scale insects have been present on these trees in large numbers during the dry season.

The avacados growing at Lamao are making rapid growth of wood, but as yet none have flowered. In view of the fact that only about 20 per cent of seedling trees bear fruit in any quantity, it will probably be necessary to import some budded or grafted trees of known bearing varieties.

Grapes.—Two of 9 vines of the Malaga variety growing at Singalong have matured fruit during the past season. This was the first borne by these vines and only a few small bunches were produced. Another variety of the Zinfandel type is under cultivation here, but as yet it has failed to fruit.

During the past year several plants of the Scuppernong grape, a variety grown extensively in the Southern States, were imported for test under climatic conditions here.

This variety grows extremely well near the seacoast from Jamestown to Florida.

Oranges.—The California orange trees planted at Singalong 6 years ago are fruiting fairly well during the present season. Six trees are fruiting and one of this number carries 92 oranges that are now nearing maturity. The fruit is smooth, well formed, and of good size.

The orange trees imported from California and Australia, growing at Baguio, are making fairly good growth and one naval orange tree is now bearing fruit.

Kumquats.—Five trees of this small citrus fruit have been grown under rather adverse conditions, but have fruited remarkably heavy and have continued to bear throughout the entire season.

Bananas.—A small plantation including the Gloria, Saba, Matabia, Latundan, Bongolan, Lacatan, and Lacatan Bula was set out at Singalong on August 3, 1907. All varieties have made very satisfactory growth. Fruit of Bongolan, Latundan, and the Lacatan varieties has reached maturity. Matabia will, judging from present indications, ripen fruit by July 10, 1908. The cutting stage of Gloria is still two months distant, while Saba, with its monster plant, 6 meters high and more than one-third meter in diameter near the ground, shows no evidence of fruiting. The Chinese dwarf banana has also been grown and has produced large bunches of fruit which was at least well above the average in quality. Plants of this banana sustained much less damage from winds than did those of other varieties.

At Lamao experiment station experiments have been started to test the value of different fertilizers for use on bananas, as well as methods of cultivation, mulching, and irrigation. Results thereof will not be available for 2 years at least.

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MISCELLANEOUS.

Lemon grass.—The small area of this grass now in cultivation at Singalong is doing nicely. The original planting was made from 2 large root clumps brought here from Lamao by the director of agriculture, and subdivided for planting on November 6, making 110 plants. Three months later these were almost as large individually as either of the original bunches. On February 6, 21 root divisions were received from Baguio and immediately planted in the field. These were prepared for shipment under direction of the secretary of the interior with a view to determining the vitality of the roots and their ability to grow and produce plants after shipping under unfavorable conditions. Before shipping all roots were removed from 13 of the plants, while 8 divisions were allowed to retain their roots. Just one small, slender plant, from which all roots had been cut, failed to grow, indicating that these roots are signally tenacious of life. Very interesting variations in the habits of growth of the Bataan and Benguet grasses were observed soon after planting. Growth was at first much more rapid in the plants coming from Benguet than was the case in those from Bataan. The leaf sheath of the former was almost white, while that of the latter was a distinct purplish red. It was thought that two distinct varieties had been found, but later developments proved them identical. So far neither yield tests to show the production from a given area, nor analytical tests to determine its content of oil have been made.

A considerable amount of this grass is now growing at Lamao and is available for distribution.

Vetiver.—This stout-growing medicinal and perfume-yielding grass has made rapid growth at Singalong. From 330 roots sent to the station by the secretary of the interior during the second week in February only 3, or less than 1 per cent, were lost in the process of planting. By the end of June it had developed a very strong system of tough, fibrous roots. The erect, growing, reedlike blades stood in dense masses 1.5 to 2 meters in height, and flowering had just begun on June 30.

Roselle.—One row about 60 meters in length was drilled to this splendid jelly plant (*Hibiscus sabdarifa*) on January 31, 1908, and later the plants were thinned to about 1 meter apart. After five months of growth the plants are from 1.5 to 2 meters in height, are bushy and vigorous, but do not show indications of flowering.

SEED AND PLANT DISTRIBUTION.

It is the object of the bureau in distributing seeds to furnish planters with sufficient seed of such promising species and varieties as are not readily obtained elsewhere in the islands, to give them a fair trial, and, if satisfactory, provide a source from which they may collect their own seed for future crops. That interest in the extension of the number of crops that may be profitably cultivated here, either for home consumption or for market, has not in the least abated is clearly shown in the following table, giving the total distribution made during the fiscal year ended June 30, 1908:

Crop.	Year ended—	
	June, 1907.	June, 1908.
Vegetables	3,763	8,600
Flowers	178	583
Maguey	220,000	1,465,115
Guinea grass		60,900
Mulberry		1,742
Other farm crops	2,184	6,581
Miscellaneous		487

FIELD CROPS.

Th principal distribution of seeds of field crops has been confined to corn, cotton, guinea grass, kapok, peanuts, rice, sesamum, maguey, and tobacco; but there is a constant and increasing demand for various other plants of economic importance, such as a hardy variety of coffee, cacao, spices, rubber, and various fruits. The guinea grass has attracted more attention than any

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other single crop excepting maguey, and during the past nine months 60,900 plants, enough to plant 24 hectares, have been propagated and sent out from Singalong.

MAGUEY.

During the past year some 42,475 plants and bulbils of Hawaiian maguey, and 1,422,640 of Ilocano maguey have been distributed to 32 provinces. In many cases these have been delivered in large consignments to the governors of the provinces or other persons so situated as to be able to make the smaller distributions to individuals to the best advantage.

Taking into consideration the number of plants distributed last year and the number planted at several of the stations of the bureau for propagation, it would seem that very shortly others who wish to plant will be able to secure plants locally or from the stations of the bureau, thus relieving the necessity of making further extensive purchases abroad, so that funds used heretofore for this purpose may be devoted to introducing and improving other valuable crops.

VEGETABLES.

As a result of the previous year's experience, the number of varieties distributed has been somewhat limited, and only such seeds are sent out as have given a fair success with ordinary good cultivation. These consist of beans, beets, cabbage, carrot, corn (field), cucumber, eggplant, lettuce, mustard, okra, peas, pepper, radish, tomato, and turnip.

A number of reports indicate, as usual, that insects cause considerable trouble to young seedlings. In the case of cucumbers this can be largely overcome by placing a piece of mosquito net over the young plants and after they get too large for this spray the leaves with some arsenious mixture, such as Paris green, or dusting the leaves thoroughly and frequently with air-slaked lime or wood ashes. In the case of many plants, such as lettuce, cabbage, tomato, etc., that stand transplanting, the carrying away of seed by ants may be avoided by sowing them in plats and transplanting to the field as soon as large enough to handle. A number of reports have indicated a lack of knowledge as to the use of the different vegetables after they are grown, and so it has been deemed advisable to combine with the instructions for planting, in the pamphlet sent out with the various collections of seed, simple instructions for the preparation and use of the vegetables.

FLOWERS.

While the distribution of flowers and seed of ornamental plants may not bring in direct financial returns, it is considered that the general effect on the communities, where some attention is given to this side of gardening, is sufficiently beneficial to justify some attempt at keeping up with the demand for this class of seeds. During the past year three times the number of collections sent out the previous year were distributed, and a number of requests were not filled for lack of seed.

REQUESTS.

Many requests have been received which, while they indicate a desire to obtain and plant better fruits and other crops, show a decided lack of information as to which are desirable for this country. This particularly refers to continued applications for apples, plums, and such fruits of northern and temperate countries marked by decided winters, during which the plants receive a complete rest, which can not be obtained here, even though a decided dry season may tend to have something of the effect of a winter in causing the plants to become dormant. While varieties of these fruits more or less hardy to local conditions may be ultimately secured by breeding and selection, it is not advisable to make any general distributions at present, as it is almost sure to lead to discouragement through the repeated failures that must be expected.

Another feature of requests that is markedly noticeable at times is the large number received from school children who desire seed for planting in school gardens. This is an excellent move and one worthy of encouragement, but it is believed that much more satisfaction could be obtained and much needless expense spared if the teachers would make the request direct, stating the amount required for the ground they are expecting to cultivate, rather than requiring each student to obtain seed for his own small plot.

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EXPERIMENT STATIONS.

Heretofore much of the work at the various experiment stations has been of the nature of commercial crop growing and demonstration work, in which attempts have been made to show the farmer that certain crops could be grown and how to grow them. This work has its value, but properly belongs to agricultural extension work on account of its educational nature. It is the intention of the bureau to continue this work in so far as it seems to be necessary in the absence of any other agency for carrying it on, but more attention will be given to collecting, testing, and breeding of native varieties of our various farm as well as foreign crops thought to be suitable to these islands.

One line of work which the bureau is planning to undertake this coming season is the collecting and testing of the native varieties of rice. Many hundreds of the so-called varieties are grown in these islands, some of which are superior to any foreign variety introduced. An attempt will be made to collect these and test them under various conditions to ascertain the best conditions suitable to their growth as well as to the value of fertilizer for the cheapest production.

Many varieties of corn are grown in various sections of these islands, from which may be selected and improved one which should prove better than any variety introduced. Work of this nature will be pushed as rapidly as funds at our disposal will permit.

Constant changes of the superintendents at these stations has interfered greatly with the work. The principal reason for these changes is the short term of service of these men and the fact that the bureau is unable to raise their salaries to hold them.

In experiment-station work it takes some time to get the work in hand and be able to reach any valuable results, owing to the fact that experiments must be run two or three seasons in order to duplicate the work and to eliminate the effect of seasons. These frequent changes have also made it difficult to secure complete notes on many of the experiments under way. It is also difficult to find men adapted to this kind of work, just as in any other business.

As the work grows older and becomes better organized it is hoped that these difficulties will disappear.

SINGALONG EXPERIMENT STATION.

Location.—The Singalong experiment station is located in the southern part of Manila, about one-half kilometer distant from Manila Bay. The point at which Calle Wright terminates in Calle San Andres lies almost in the center of the grounds. The station comprises a little more than 4 hectares of land, including lawns, drives, and grounds occupied by buildings, corrals, etc. The soil is light and sandy. An estero, into which salt water from the bay enters at high tide, lies facing the grounds. The fact that many of our deep-rooting plants and trees have not produced good results is perhaps due in part to the presence of this salt water. The highest elevation of the station grounds does not exceed 2 meters.

Water supply.—A 6-inch artesian well is the source of water used at Singalong. The water in this well rises to within 1 meter of the surface and is pumped into a 6,000-gallon tank, having an elevation of 8 meters, by means of a 6-inch duplex pump. April 28, 1908, was the only time during the past year when it was found necessary to suspend pumping operations for a few hours owing to a failure in the water supply. The 8-horsepower steam engine previously used for pumping has been removed to the bodega for grinding corn and a 20-horsepower electric motor installed in its place. This change facilitates irrigation by eliminating the waste of time consumed in generating a sufficient head of steam to operate the plant.

The pipe system, through which water is carried to all parts of the grounds, consists of a 3-inch pipe at the pressure tank, gradually decreasing to 1 inch at remote points of the system. Practically all irrigation is done through 1-inch hydrants or "turn-outs." The hourly cost of running this plant, without considering interest on the original investment, wear of machinery, or risk from accidents, is about ₱0.60.

Equipment.—Two good Kentucky mares are used at the station to perform all general farm and team work. Common farm implements, such as an escort wagon, stirring plow, steel harrow, 5-tooth cultivator, wheel hoes, garden seed drills, and other hand implements, have been provided.

Labor.—Radical changes have been made during the year in that line of the work with which the employment of labor is concerned. Superintendent Ross

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carried into effect on August 1, 1907, a revised pay roll, providing for a general reduction both in wages and in the amount of labor employed. This measure reduced our force from 28 to 18 laborers and decreased the average daily wage from ₱1.14 to ₱0.90. Despite these changes no difficulty has been experienced in securing help when needed. The labor force here is composed largely of experienced men, who have been employed at the station for a period of two or more years. With a few exceptions they have rendered satisfactory and efficient service.

Climate.—Weather conditions have been in some respects unusual. The wet season of 1907 was late opening, but continued correspondingly late in the fall. Due to this fact no general irrigation was demanded prior to the second week in February, and good rains on the 15th and 25th rendered further irrigation during that month unnecessary. Rain fell again on March 29, putting the soil in excellent condition. The wet season opened again on May 3, and since that time no irrigation has been needed. A typhoon struck Manila on October 26 and caused considerable damage to crops and plants growing at the station. Another, more severe and of longer duration, visited us on May 28 and 29, doing much damage to vegetation.

All things considered, weather conditions have been possibly more than usually favorable for a majority of the farm operations being performed.

Disposition of green forage and seeds.—Forage-growing experiments conducted here, and reported elsewhere in this report, have furnished an abundance of green feed for all live stock maintained at the station, besides a considerable surplus which has been delivered at San Lazaro for feeding to the serum herd. Guinea grass was also furnished the quartermaster's department for conducting a feeding experiment in which this grass was fed to horses. The following table shows the different feeds removed from Singalong since October 7, 1907:

Kind of forage.	Quartermaster's Department.	Serum laboratory.
	Kilos.	*Kilos.*
Guinea grass	10,909	36,608
Teosinte		3,140
Green corn		1,950
Total	10,909	41,698
Making grand total of		52,607

Seeds grown at this station have been sent to the office and turned over to the division of seed and plant industry for distribution. They have been furnished in comparatively small quantities. Among others were 1,985 kilos of palay, about 145 of velvet beans, and 55 of teosinte.

There is no fence surrounding these grounds, hence it is impossible to grow many crops successfully owing to the depredations of animals, such as dogs, hogs, and chickens, as well as people trespassing on the land and destroying the value of experiments by carrying off the fruits and vegetables. Although a watchman is kept on the ground at night, it is impossible to stop this vandalism.

Silk culture.—Near the close of the last fiscal year this bureau, in connection with that of science, started a series of cooperative experiments in silk culture at Singalong. This work has been under the direct supervision of Mr. W. Schultze, of the bureau of science, with Mr. José Dizon, of this bureau, in charge of the feeding and care of the silkworms. Two men have been used for collecting leaves, which have been obtained both from the station grounds and in other parts of the city. Two girls are now employed in the silk house.

Owing to the fact that the supply of mulberry leaves has been limited, it has not been possible to carry on the experiment with more than about 11,000 worms for each generation. The supply of leaves consumed daily by the 11,000 worms varies according to their age, as follows:

First age (from the first to the third day), 0.9 kilo per day.

Second age (from the fourth to the fifth day), 1.4 kilos per day.

Third age (from the sixth to the seventh day), 2.3 kilos per day.

Fourth age (from the eighth to the tenth day), 11.4 kilos per day.

During the four periods they consumed a total of 44.5 kilos of leaves, or an average of 11.1 for each.

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As soon as the larvæ show a yellowish transparent color, they are placed in wire baskets filled either with rice straw, dry weeds, cogon, or broom corn; or in wooden baskets divided into sections by small bamboo sticks. Of the different materials used, broom corn has been found to give the best results, as it causes less waste of silk than the others.

Three days after each generation is pupated the cocoons are sent to the bureau of science, where they are prepared for spinning the silk. Before they are sent, 300 of the best are selected for breeding purposes. These latter are placed on three trays covered with paper, and in about ten days the moths emerge from the cocoons.

Breeding is allowed to take place at once, after which the females are placed on a piece of circular filter paper. One day after, the females lay their eggs.

With the exception of the first and second generations, at which time the work was in the hands of the bureau of science, the number of cocoons obtained from June 1, 1907, to June 30, 1908, was as follows:

Generation.	Number of cocoons.
Third	1,670
Fourth	5,570
Fifth	11,220
Sixth	8,290
Seventh	11,343
Eighth	9,533
Ninth	11,768
Tenth	4,659
Eleventh	8,671
Total	72,824

During June, 1908, a reeling machine and a roll upon which to wind the silk have been constructed, and the girls working in the silk house are now being taught to reel silk.

Sale of Singalong station.—The Assembly passed an act providing for the sale of Singalong experiment station, and the work now carried on there will be moved to Alabang. The soil at Alabang is somewhat different from that at Singalong, containing more clay and being poorer in plant food, owing to the fact that it has been in cultivation a number of years.

BAGUIO EXPERIMENT STATION.

Location.—This station is located about 5 kilometers north of the town of Baguio, in the Trinidad Valley, which is a crater-like depression drained by the Balili River, which passes through it. It bounds the farm on the east side and makes its exit through a notch on the north side of the valley. The altitude of this section is approximately 1,500 meters.

Soil.—The soil at this station is a sort of silt, alluvial loam and is very deep, having been formed by the erosion of the near-by limestone rocks and clay hills, and deposited by the Balili River, which is now cutting a meandering course through its former deposit. The soil is lacking in humus and is poor in plant food, so that the use of commercial fertilizers and all the manure that is available is necessary for the production of crops.

Climate.—As mentioned in our last report, the temperature in this section reaches the frost line in midwinter and the rainy season is a little earlier than on the west coast of the islands; that is, beginning in May and ending in October. On account of these facts this section of the Philippine Islands has given promise of growing successfully many fruits and vegetables adapted to semi-tropical conditions elsewhere but not adapted to sea-level conditions here.

The fact that the summer capital has been established at Baguio and that there is considerable demand for fruits and vegetables during the dry season, especially during March, April, and May, has made it almost imperative that this station grow vegetables on a commercial basis to supply the demand at that time. This has interfered materially with strictly investigative work, and as soon as private parties can be induced to take up this line and supply the demand vegetable growing on a commercial basis will be discontinued and the work confined more to investigative lines.

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A heavy typhoon and rain on May 28 did considerable damage to young trees and vegetables.

Water supply.—Irrigation is necessary during the greater part of the dry season. The water for this purpose is obtained from the Balili River at a point about 1 mile from the station, and is conducted to the farm in a small canal. The drainage of surplus water, as far as slope is concerned, is poor, the farm being so nearly level and the somewhat porous nature of the soil rendering underdrainage unnecessary.

Labor.—Both men and women native laborers have been employed in the past. For the lighter grades of labor the Igorot girls and women are probably just as efficient and satisfactory as the men, as they are inured to labor from childhood and are therefore very muscular. The daily wage for each laborer averages about 50 centavos, and the average number of laborers per day during the past year has been 26.

Operations.—During the past year considerable work has been done beautifying the ground and erecting buildings. A commodious house has been erected for the superintendent and officers in charge, roads have been laid out and graveled, and many ornamental plants have been set out.

Work has been confined largely to the testing of such vegetables and fruits as are suitable to existing climatic conditions. Many thousand strawberry plants have been grown for distribution to parties who wish them. Some forage crops have been tested, but owing to the cool climate and rather poor soil conditions, satisfactory results have not been obtained. Experiments in crossbreeding and seed selection of varieties of tobacco have been carried on at the substations, Sablan and Naguilian, during the year. Seeds were saved from many of the most promising plants and distributed to other sections of the islands.

Owing to change of management of the station during the year, complete data on many of these experiments can not be obtained.

The apple, quince, and loquot trees growing at this station are doing fairly well, but as yet no fruit has been secured. One peach tree has borne fruit, which was of poor quality, lacking flavor. One small fig tree is now bearing fruit, and an attempt will be made to propagate it more extensively. A native variety of raspberry has been propagated, which produced a large, highly colored fruit, but lacking in flavor. Imported varieties have not done so well as native varieties.

LAMAO EXPERIMENT STATION.

Location.—This station is located on the Lamao Forest Reserve, near Manila Bay, on the Lamao River, in Bataan Province. Most of the land now in cultivation is broken and hilly.

Soil.—The soil is underlaid with drift bowlders, cobblestones, and large gravel, and varies from red clay to beach sand, including all varieties of sandy loam. It has evidently been formed by washings from the mountain sides. In many places it is so porous that it is difficult to conduct an irrigating ditch across it without puddling the ditch or fluming. Most of the land was originally covered with forest, which makes it rather difficult to bring it into cultivation. The fertility, however, is somewhat above that of the other farms, owing to the fact that it has never been cropped.

Climate.—The climate is very similar to that in Manila, except that showers are more frequent on account of its being near Mariveles Mountain.

Water supply.—It is well supplied with water taken from the Lamao River by an irrigation ditch. This river supplies an abundance of water at all times, and all that is necessary to secure it is to build a dam of bowlders across the stream in the dry season in order to run the water into the irrigation ditch.

Labor.—Some difficulty has been experienced in securing good labor during the past year, owing to the presence of a sawmill in the vicinity of the station which pays higher wages than those at the station. It was found necessary to increase the wages from ₱0.06 a day to ₱0.75 in order to secure the necessary labor.

Buildings and equipment.—Little has been done in the way of building, owing to the fact that no live stock is kept except the work animals, and only a few buildings are necessary. The superintendent's house has been finished, and now suitable quarters can be had for scientific workers and investigators who wish to stop there for a limited time.

The equipment consists mainly of hand tools and a few plows that are used in cultivating the crops.

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Operations.—The work has been confined largely to the testing of vegetables; growing of nursery plants of kapok, abaca, maguey, bananas, and pineapples. Many other tropical fruits have been sent here for trial, but as yet no report can be made upon them.

Insect pests and plant diseases.—Plant diseases have done considerable damage to vegetables during the past year. In May a swarm of locusts appeared and did considerable damage to corn and other growing crops.

LA CARLOTA SUGAR FARM.

Location.—This farm is located at the foot of the volcano Canlaon, about 6 kilometers east of the town of La Carlota, Occidental Negros. It was established by the Spanish Government as a sugar experiment station, but so far sufficient means have not been at hand to carry on operations in the way they should.

Soil.—The soil is well adapted to the production of sugar, being of a black, volcanic nature, resembling in many respects the Middle Western States. The soil is very deep, filled with bowlders, cobblestones, and large gravel. The subsoil is open and porous, rendering underdrainage unnecessary.

Water supply.—A river of considerable size bounds the farm on one side and there are several smaller streams within its limits. A dam has been constructed in the larger river and a canal has been built which carries the water a considerable distance from the stream, where it enters a tunnel through which it passes down to the sugar mill, where it is used to produce the power required for milling the cane produced. A branch of this canal carries the water out farther onto the farm where it becomes available for irrigation purposes. Much trouble has been experienced in attempting to use the water of this river for irrigation purposes, as the hacienderos having mills farther down the river complain that there is a lack of water for power when it is used for irrigation purposes higher up the stream.

Equipment.—Little change has been made in the equipment during the past year, the old antiquated sugar machinery still remaining in use.

Operations.—Little has been produced except sugar. A few crops, such as vegetables, etc., have been grown in an experimental way, but as this is in the sugar district the main crop is sugar. It consisted last year of 36 hectares of rattoon cane, 13 being first year and 23 second and third year rattoon. The first-year rattoon produced 3,862 kilos per hectare, the second and third year 2,295 kilos per hectare. The total yield of sugar was 102,991 kilos. The crop was about an average one for this province. Six varieties of cane are being tested for adaptability to climatic conditions and yield. Nursery plants of maguey, sisal, and kapok are being grown for distribution.

No live stock is kept at this station except the work stock used in farm operations. Foot-and-mouth disease broke out among the work stock in April and interfered with farm operations to some extent, but all have recovered and are now working again.

LIPA EXPERIMENT STATION.

This station is located near Lipa, Batangas Province, and was started some years ago to see what could be done toward reviving the coffee industry, but owing to the ravages of insects and diseases the trees have not made much growth.

Funds have not been available to push this work beoynd the preliminary stage.

DIVISION OF ANIMAL INDUSTRY.

This division includes the veterinary control work, the serum laboratory, the dairy farm at Alabang, the Trinidad stock farm at Baguio, and all general investigations in animal industry.

CONTROL WORK.

GENERAL CONDITIONS.

The general conditions of animal diseases in the provinces have been distinctively worse than during the previous fiscal year. The loss of ground was due largely to the increase in the diseases prevailing among imported cattle and to the unavoidable delay in enacting and enforcing a satisfactory quaran-

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tine law prohibiting the importation of diseased cattle and regulating the movements of live stock in the Philippine Islands.

The people of the provinces have continued to show their increasing faith in the ability of this bureau to control infective animal diseases by the greater support which they have given the veterinary work during the past fiscal year. Their cooperation is absolutely essential to ultimate success, but if the number and extent of outbreaks of diseases continue to increase this will undoubtedly afford just cause for the withdrawal of a large measure of their support, which has been gradually increasing during the past two years. This fact is of considerable significance. Even though much of the work necessary to the final control of animal diseases remains yet to be undertaken, that so far done is having a constant beneficial effect.

The ultimate object should be the complete eradication of these diseases. Immunity to them is too expensive to be given serious consideration. Remedies to prevent, control, or cure them are only palliative. The only security of real merit is the knowledge that they do not exist in the country and are not likely to be reintroduced.

One of the worst features has been the necessity for constantly moving employees from one province or island to another while the work on which they were engaged was incomplete. This bureau should be able to maintain its agents permanently in each province and important island, so that they will become familiar with the territory and people and thus be able to do more effective work by being constantly on the ground to give prompt attention to outbreaks when they occur. This will also result in economy, as the travel necessary under present conditions is excessive compared with the amount of work done.

QUARANTINE LAW.

In view of the persistence of animal diseases in the territory from which most of the cattle shipped to the Philippines are received, efforts have been made for more than two years to secure the passage of a satisfactory law for the control of infective diseases among imported animals. On October 12, 1907, the Philippine Commission passed Act No. 1760, which is as follows:

(No. 1760.)

"AN ACT To prevent the introduction into the Philippine Islands of dangerous communicable animal diseases, to prevent the spread of such diseases within the islands, and for other purposes.

"*By authority of the United States, be it enacted by the Philippine Commission, that:*

"SECTION 1. For the purposes of this act domestic animals are hereby defined as horses, mules, asses, cattle, carabaos, hogs, sheep, goats, dogs, deer, and circus animals, or those intended to be used for show purposes.

"SEC. 2. For the purposes of this act a dangerous communicable animal disease is hereby defined as glanders or farcy, surra, rinderpest, hemorrhagic septicæmia, hog cholera, foot-and-mouth disease, or any other acute communicable disease which may cause a mortality of over 5 per cent in the period of one month.

"SEC. 3. It shall be unlawful for any person, firm, or corporation knowingly to ship or otherwise bring into the Philippine Islands any animal suffering from, infected with, or dead of any dangerous communicable disease, or any effects pertaining to such animal which are liable to introduce such disease into the Philippine Islands: *Provided*, That any such animal or effects may be permitted by the director of agriculture to enter the islands under such conditions as to quarantine, cremation, or other disposal as he may direct, or which shall be deemed by him sufficient to prevent the spread of any such disease.

"SEC. 4. It shall be unlawful for any person, firm, or corporation knowingly to ship, drive, or otherwise take or transport from one island, province, municipality, township, or settlement to another any domestic animal suffering from any dangerous communicable disease, or to expose such animal, either alive or dead, on any public road, street, or highway where it may come in contact with other domestic animals.

"SEC. 5. Whenever the secretary of the interior shall declare that a dangerous communicable animal disease prevails in any island, province, municipality, township, or settlement, and that there is danger of spreading such disease by shipping, driving, or otherwise transporting, or taking out of such island,

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province, municipality, township, or settlement any class of domestic animals, it shall be unlawful for any person, firm, or corporation to ship, drive, or otherwise remove the kind of animals so specified from such locality except when accompanied by a certificate issued by authority of the director of agriculture stating the number and kind of animals authorized to be shipped, driven, taken, or transported, their destination, the manner in which they are authorized to be shipped, driven, taken, or transported, and their brands and distinguishing marks. Such certificate shall also state that the animals in question have been inspected by a duly authorized agent of the director of agriculture and found free from dangerous communicable animal diseases and shall give the date of such inspection.

"SEC. 6. The director of agriculture is hereby authorized—

"(*a*) To maintain inoculation, quarantine, and detention stations for domestic animals in such places as may be approved from time to time by the secretary of the interior, and to place all animals arriving from foreign and domestic ports or interior places in quarantine for such time as he may deem necessary to prevent the introduction and spread of dangerous communicable animal diseases.

"(*b*) To inspect all domestic animals arriving by boat, rail, or otherwise in the cities, ports, or places where quarantine stations are maintained and in such other places as he may deem necessary for the purpose of preventing the introduction and spread of dangerous communicable animal diseases within the Philippine Islands.

"(*c*) To require that animals which are suffering from dangerous communicable diseases or have been exposed thereto be placed in quarantine at such place and for such time as may be deemed by him necessary to prevent the spread of such disease.

"(*d*) To require the cleaning and disinfecting of any utensil, place, corral, yard, or building deemed by him to be infected with dangerous communicable animal disease, and to prohibit the keeping of any domestic animals in such place, corral, yard, or building until it has been placed in a sanitary condition.

"(*e*) To require the cleaning and disinfecting of any boat, car, vehicle, or other conveyance deemed by him to be infected with dangerous communicable animal disease, and to prohibit its further use for transporting domestic animals until it has been placed in a sanitary condition.

"(*f*) To cooperate with provincial and municipal boards in the suppression of dangerous communicable animal diseases and in the establishment and maintenance of municipal slaughterhouse and milk-inspection systems, the object of which shall be to prevent the slaughter and sale of animals having diseases or injuries of such a nature as to render the meats and other food products derived from them dangerous or unwholesome for human food.

"SEC. 7. Whenever the director of agriculture shall order any animal placed in quarantine in accordance with the provisions of this act, the owner of such animal, or his agent, shall deliver it at the place designated for the quarantine and shall provide it with proper food, water, and attendance. Should the owner or his agent fail to comply with this requirement the director of agriculture may furnish supplies and attendance needed, and the reasonable cost of such supplies and attendance shall be collectible from the owner or his agent.

"SEC. 8. Any person violating any of the provisions of this act shall, upon conviction, be punished by a fine of not more than one thousand pesos, or by imprisonment for not more than six months, or by both such fine and imprisonment, in the discretion of the court, for each offense.

"SEC. 9. The public good requiring the speedy enactment of this bill, the passage of the same is hereby expedited in accordance with section two of 'An act prescribing the order of procedure by the Commission in the enactment of laws,' passed September twenty-sixth, nineteen hundred.

"SEC. 10. This act shall take effect on its passage.

"Enacted October 10, 1907."

Early in this year the number of shipments infected with rinderpest greatly increased. The enforcement of the law, however, was generally opposed by the cattle dealers, who claimed that it would work a hardship on buyers desiring animals either for work purposes or for slaughter.

When it became evident that to prevent the further importation of diseased cattle into the Philippine Islands vigorous measures would have to be adopted for the enforcement of the quarantine law, a veterinarian of this bureau was sent to Indo-China for the purpose of investigating the possible supply of cattle from that country. This action was taken because large shipments were already

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arriving from there. These cattle are of the same type as the native and Chinese, are from about the same climate as the Philippines, and are generally free from disease. There are also in this territory an abundance of carabaos, which can be purchased at reasonable prices.

It was learned from this investigation that the French Government in Indo-China has a thorough system of veterinary inspection and Pasteur Institutes connected with the department of agriculture. The work done in the control of animal diseases covers the entire territory. These facts indicate that Indo-China is a satisfactory source of supply of cattle for the Philippines.

This veterinarian was also instructed to investigate the conditions which prevail in Hongkong and report on the possibility of lessening the amount of disease existing among cattle shipped to the Philippines from that port. The information he gathered seemed to show that the conditions under which cattle are handled in the Hongkong live-stock depot are not such as to give any guaranty that diseases will not appear there at almost any time. Soon after he returned a shipment of cattle from Hongkong was found to be infected with foot-and-mouth disease, but before any effective measures could be taken to prevent the further importation of the disease it had spread over the city of Manila from the private corrals in which the owners had stored the infected cattle.

General Order No. 9, designed to prevent the further importation of diseased cattle, was issued on April 30, 1908. This met with violent opposition from several cattle dealers in the city of Manila, and its operation was temporarily suspended.

At the request of the governor-general, the colonial veterinarian of Hongkong was sent to Manila for a conference relative to the cattle trade between that port and the Philippines. The result was a decision that since the colonial government of Hongkong has no jurisdiction over the Chinese territory from which cattle are received for export it has no means of controlling diseases among them. Because of this fact there is constant infection of the stockyards at that port and of many shipments leaving there for these islands.

On June 5, 1908, the order excluding infected cattle was reissued in the form of General Order No. 10, and on account of the diseases prevailing in Hongkong all shipments from that port have temporarily ceased.

Importers have been bringing in a few dairy cattle from Australia, but the trade in beef bullocks from there has not been resumed. This trade was suspended more than two years ago on account of the long time en route, losses by disease after arrival in the Philippines, popular prejudice against the heavy quarters produced by Australian bullocks, and the fact that the animals are unsuited for work purposes. As these conditions still exist, and in view of the fact that large quantities of Australian frozen meats are being imported for the Army and for sale to the general public, especially in Manila, there is probably no occasion for resuming the trade.

LIVE-STOCK DEPOTS.

The establishment of live-stock depots for the principal ports of entry in the Philippine Islands has assumed definite form during this fiscal year. Under the appropriations granted last year it was impossible to do anything of practical value in this direction except to investigate the conditions existing and work to secure adequate appropriation for this purpose.

The first effective measure adopted was the passage of Act No. 1827, appropriating ₱100,000 for the suppression of animal diseases. From this amount the current expenses of the increased veterinary force were paid to the end of the fiscal year, an allotment was made for increasing the capacity for the manufacture of serum, and a sufficient amount set side for the construction of suitable live-stock depots for the storage and quarantine of imported animals arriving in the ports of Iloilo and Cebu.

Act No. 1855 appropriated ₱150,000 for the purchase, filling, and preparation of land in Manila, Iloilo, and Cebu on which to erect live-stock depots and quarantine stations. The bulk of this money will be required for Manila. The old Spanish experiment station, "La Granja Pequeño," will be used as a site for the Iloilo depot, and land will be secured later for the depot at Cebu.

The public improvements act, No. 1837, provides the sum of ₱103,000 for boring an artesian well, for constructing the necessary buildings for the storage of animals, and for a forage factory in the Manila live-stock depot.

All of these appropriations taken together give about ₱280,000 to be expended in providing permanent facilities for the control of infective animal diseases.

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It is planned to construct all three of these depots and have them in full operation by the end of the coming fiscal year.

The value of these live-stock depots as an aid in the control of infective animal diseases in these islands is incalculable. The provision for their construction is one of the most important moves ever made in the attempt to free this country from the ravages of infective animal diseases.

SUBSTATIONS.

The establishment of the substations to deal with local shipments of infected cattle, as recommended in the last annual report, was found impracticable until after the establishment of live-stock depots in the ports of entry. However at the close of the year we have in operation 11 small substations in the vicinity of Manila, at which this bureau maintains systems of veterinary inspection and quarantine, with a view to limiting the spread of diseases through this port of entry.

IMPORTATION AND MOVEMENT.

There has been considerable increase in the live-stock trade carried on during the past year, especially in the importation of cattle. The receipts for the port of Manila were as follows:

Kind.	From foreign ports.	From inter-island ports.
Cattle	37,815	2,820
Carabaos	1,750	1,298
Horses	2,170	1,862
Hogs	38	54,237
Sheep	8	186
Goats	10	841
Other animals	29	368
Total	41,820	61,612

The bulk of these animals were disposed of as follows:

Kind.	Slaughtered.	Shipped to provinces.
Cattle	26,090	10,949
Carabaos	.....	1,711
Horses	.....	407
Hogs	58,119	230
Sheep	10	26
Goats	368	26
Other animals	3	23
Total	84,590	13,372

The difference between these two tables is accounted for largely by sales made in the city of Manila for draft purposes, deaths in the corrals, and animals on hand at the end of the fiscal year.

Of the imported cattle arriving in Manila, 20,786 head were from Hongkong, 376 from Hai How, and 16,600 from ports of Indo-China. There were also received from Indo-China 1,750 head of carabaos. Of these, 12,978 arrived at this port suffering from or exposed to infective diseases. All except three shipments of the infected and exposed cattle came from Hongkong, and were infected principally with rinderpest and foot-and-mouth disease, and two shipments with anthrax. Of these three infected shipments, one was from the island of Hainan, China, one from Vinh, and one from Pnom Penh, Indo-China. Of the cattle and carabaos arriving in Manila in a healthy condition, 4,262 head contracted infective diseases while being held in the corrals of cattle dealers in this city.

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The receipts and shipments of live stock at the port of Iloilo were as follows:

Kind.	Number received.	Number shipped to provinces.
Cattle	2,185	903
Carabaos	590	846
Horses	436	110
Hogs	3,008	34
Goats	408	39
Sheep	526	27
Other animals	57	30
Total	7,205	1,989

The system of inspection for the port of Cebu was not permanently established until February 1, 1908; hence the statistics therefor are not complete. It appears, however, that the imports were comparatively small.

DISEASES.

RINDERPEST.

As in previous years, rinderpest has continued to be the most destructive infective animal disease existing in the islands. The situation has been greatly aggravated by the constant importation of infected cattle from Hongkong.

On account of the increase in the number of outbreaks over that of the previous year, it has been necessary to limit the inoculations almost entirely to herds actually infected.

During the year 6,933 cattle and 14,072 carabaos, or a total of 21,005, were inoculated with antirinderpest serum. Of these, only 621, or 2.95 per cent, are reported as having died.

The percentage of animals suffering from the disease at the time of inoculation has been very large, and the total number inoculated was nearly 5,000 head more than for the previous year.

The total amount of serum used in making these inoculations was 5,384 bottles of 300 cubic centimeters each.

The principal outbreaks of rinderpest have occurred in the provinces of Batangas, Pampanga, Capiz, Antique, Negros Occidental, and La Laguna. It has also appeared to less extent in most of the other provinces.

In many cases the provincial and municipal officials have cooperated by establishing and policing systems of quarantine, and have otherwise given valuable aid in the work. This is necessary, as the bureau of agriculture has no means for employing a force sufficiently large to do this work throughout the islands. Besides, to do so would be a violation of the spirit of the local self-government system in general operation throughout the provinces.

FOOT-AND-MOUTH DISEASE.

This disease has not been observed to any extent in the Philippines for more than two years. The few cases seen in Manila from time to time were no doubt due to direct importations from Chinese territory. It was reintroduced in shipments arriving in Manila from Hongkong during March, 1908. Every shipment of cattle received from Hongkong from that date to the end of the fiscal year was infected with this disease. Foot-and-mouth disease reached Iloilo and Cebu in other shipments about the same time. It has spread to more than 25 provinces and important islands and has attacked thousands of cattle and carabaos. It has not been, in most cases, of a virulent type, but has temporarily lamed the animals so as to unfit them for work. There have been comparatively few deaths from this disease, although many of the animals which were worked while their feet were sore have suffered very severe lacerations, many of them being rendered permanently lame.

The disease still prevails to some extent in a large part of the territory between Lingayen Gulf and the southern extremity of the island of Luzon. It has also spread to many portions of Panay and Negros Occidental. Its ravages have been most severely felt in the corrals of live-stock dealers in the city

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of Manila and in the surrounding provinces. More than 4,000 head of healthy cattle and carabaos, which arrived in Manila free from this disease, have contracted it in this city.

There is no effectual way to prevent its spread except by a rigid quarantine.

SURRA.

During the year animals were examined for surra, as shown in the following table:

Kind of animal.	Examined.	Positive.
Horses	4,311	286
Cattle	353	.....
Carabaos	315	22
Total	4,979	308

The number of animals found affected was nearly four times that for the previous year. This does not necessarily indicate an increase in the amount of the disease, but rather that it is more often reported and diagnosed by this bureau.

The principal outbreaks of surra have occurred in the provinces of Bohol, Cagayan, Tayabas (island of Marinduque), La Laguna, Albay, and Leyte, with smaller outbreaks in other provinces and islands. This wide distribution demonstrates the necessity for thorough work throughout the archipelago if this disease is to be completely eradicated.

EPIZOOTIC LYMPHANGITIS.

This disease seems to affect horses throughout the islands, but is not extensive or serious at the present time. Out of 2,188 animals examined during the year only 125 were found to be affected with the disease. An experiment was conducted at the Trinidad stock farm, Baguio, in the use of iodide of potassium in the treatment of this disease. The animals affected were three native pony mares, purchased a few months previously, which subsequently developed the disease. One of them had it in a general form, while the other two had only local lesions. The two latter responded promptly to the treatment, which seems to have effected a complete cure. The other was greatly improved, but not cured.

ANTHRAX.

A disease resembling anthrax has prevailed for a number of years in limited sections of the mountain provinces, especially Nueva Vizcaya and Lepanto-Bontoc. An extensive outbreak of the same disease appeared in Lepanto-Bontoc in the latter part of July, 1907. A veterinarian was sent there, but he failed to see any considerable number of affected animals. Based on the post-mortems of two cattle he pronounced the disease anthrax, but subsequent evidence seemed to throw some doubt on this diagnosis.

This bureau requested the bureau of science to begin the manufacture of anthrax vaccine, but before it could be gotten to the place where the outbreak occurred the disease had largely disappeared. The territory in which this disease has prevailed is very difficult to reach and a large amount of damage may occur at any time unless a veterinarian is on the ground to give prompt attention to possible outbreaks.

On October 29, 1907, the steamship *Loongsang* arrived at the port of Manila from Hongkong with a cargo of cattle infected with anthrax. Landing permit for this shipment was denied, and it was returned to Hongkong. On the same date the steamship *Rubi* arrived in this port from Hongkong with a cargo of cattle reported to be infected with anthrax As none of the cattle in this latter shipment were affected with the disease at the time of inspection, permit was given for their slaughter on board ship, and the meat was brought ashore and placed in cold storage.

GLANDERS.

This disease seems to be decreasing from year to year. Out of 590 horses examined for glanders this year only 61 were found to be positive. This, however, represents only a small fraction of the cases which actually existed, as the disease does not usually present alarming symptoms and often is not reported to the veterinarians.

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HOG CHOLERA.

It appears that this disease has increased in its ravages to a considerable extent, although it still prevails in a number of provinces. It most often occurs among animals in the channels of trade, or where they are in crowded quarters. The examinations made by the representatives of this bureau included 354 head of hogs, of which 94 were found to be affected with the disease.

MINOR DISEASES.

Some observations have been made in minor diseases, such as chicken cholera, mange of horses and dogs, etc., but no definite statistics or reports have been received which would be suitable for publication.

SERUM LABORATORY.

LOCATION AND BUILDINGS.

As stated in the last annual report, the old corral at the San Lazaro Hospital, in the city of Manila, now used for the serum laboratory, is entirely unfit for such purposes. During the year the buildings, sheds, and walks have gone into considerable decay on account of their temporary nature and for lack of substantial repairs, which it was not thought advisable to make, in view of the contemplated move in the near future to the new quarters at the Alabang stock farm.

More than half of the fiscal year had passed before contract was let for the buildings on this farm. On account of the small appropriation available for this purpose great difficulty was experienced in securing a contractor. The bureau of agriculture finally took over all of the work except the reenforced-concrete laboratory building, and has made every effort to push it to completion. Serious and apparently unavoidable delays in securing materials and laborers were encountered. For these and other reasons the work was not half completed at the close of the fiscal year. In view of the early advent of the rainy season, it will not be possible to complete the buildings and get the grounds in proper condition for the removal of the serum herd there before the end of the first quarter of the coming fiscal year.

SERUM HERD.

On account of our inability to move into the new quarters, where it was expected to double the serum herd, the number of animals used for serum production during the past year has not exceeded 120 head at any time. This resulted in a constant shortage of serum, which was severely felt on account of the great demand therefor in dealing with the large number of outbreaks of rinderpest encountered in the provinces.

The serum cattle have been in excellent condition during most of the year, except for a general outbreak of foot-and-mouth disease among them about the first part of April. Practically all of the animals contracted it, and a few of them suffered severely. Most of them recovered promptly after a few days' treatment, and the decrease in the amount of serum produced was felt only during April and May.

Some difficulty has been experienced in introducing new bullocks into the herd on account of the great prevalence of rinderpest among shipments received in Manila from Hongkong, where most of our serum bullocks are obtained. This was greatly aggravated by the appearance of foot-and-mouth disease, which causes many deaths when it occurs as a complication with rinderpest. This resulted in raising the death rate among the bullocks immunized to more than 10 per cent, or double that which would normally prevail. The most serious effect, however, of this combination of diseases was in connection with the vaccine calves, where the death rate reached 25 per cent.

PRODUCTION OF SERUM.

The amount of serum produced during the year was 1,800.9 liters, or sufficient to make about 5,400 bottles of 300 c. c. each. The process of centrifugating and filtering it, introduced January 1, 1907, has been continued throughout the

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fiscal year. This system results in a sterile serum which is vastly superior to the unfiltered product.

Two additional improvements of considerable consequence in its production have been made during the past year. From 4 to 8 liters of normal salt solution were injected into the peritoneal cavity of virulent blood animals two hours before bleeding them. After the animals had been bled to death this saline solution was recovered and seems to possess all the virulent properties of the blood itself. This has the effect of more than doubling the amount of virulent fluid obtained from each animal, and consequently saves half of the expense formerly incurred in providing virulent blood. This process was practiced on 67 head of cattle, from which 338.5 liters of virulent peritoneal fluid were obtained, or an average of 5.58 liters per animal.

The serum made from bullocks injected with this material has been thoroughly tested by the bureau of science and is reported to have more immunizing power than that made from bullocks injected with virulent blood.

In view of these facts all cattle used for the production of virulent material hereafter will be injected with the saline solution for use as above indicated.

The other notable improvement in the production of serum was the shortening of the time between the immunization of bullocks and the beginning of their use for the production of serum. Under the old process they were given successively 1, 5, 10, 25, 50, 100, 250, 500, and 1,000 c. c. of virulent blood at intervals of from three to ten days. By this process not less than eighty days were usually required to bring the bullock up to where it would begin to produce serum. The new process consists of injecting successively 1, 10, 100, and 1,000 c. c. of virulent blood or fluid, at the same intervals, the whole process covering a period of only forty days, at the end of which time the bullock begins to produce serum. That produced by this method was found to have as much or more immunizing power than that produced by the old. It has given excellent satisfaction in the provincial work conducted extensively throughout the islands.

VACCINE CALVES.

The bureau of agriculture has continued to furnish calves to the bureau of science for use in the manufacture of smallpox vaccine for the bureau of health. Many obstacles were met with during the year in securing a satisfactory supply of calves. With increased prevalence of rinderpest, which is particularly destructive among calves, their shipment to Manila was gradually suspended. Dealers would bring them in only on special order and then a whole shipment was often found infected with the disease. It was found practically impossible to save those in the advanced stages of the disease and, as above stated, the death rate has been correspondingly high.

One cattle dealer who desired to import heifer calves with which to stock a farm, proposed to furnish them to the bureau of agriculture to be used as vaccine calves, with the understanding that all expenses of immunization and keep would be defrayed by the government and that he would stand all losses resulting from death. Under this arrangement he furnished 52 calves, of which 35 were infected when received. Of these 13 died, 10 from rinderpest, and 3 from a combination of rinderpest and foot-and-mouth disease.

IMMUNIZATION.

Only 82 head of cattle were accepted for immunization during the year, of which 30 were grade Spanish cows with calves at foot or pregnant. These were purchased by the bureau of agriculture for an experiment in the inoculation of this class of cattle and with a view to their subsequent use as breeding stock. Of these 1 died from injury in shipment, 11 aborted when the symptoms of rinderpest appeared, and 7 of these died.

An Australian cow from Sidney, with calf at side, dropped in Manila, were submitted for immunization. As both were not immune to tick fever the symptoms of this disease developed just as they were recovering from rinderpest, and both of them died.

Of the animals received for immunization 16 were carabaos, 1 of which died. The loss among animals submitted for immunization was 12½ per cent. This is much higher than the loss which would ordinarily be sustained, on account of the large number of infected animals which were submitted rather for serum treatment than immunization, and the large number of these cases complicated with foot-and-mouth disease.

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TRINIDAD STOCK FARM.

LOCATION.

This farm is located in the Little Trinidad Valley, 6 kilometers north of Baguio. Being at a high elevation, the climate is well suited to the American horses kept for breeding purposes.

WATER SUPPLY.

The water for the stock is secured from a small spring near the barns, which during very dry seasons does not furnish enough water therefor. If the number of stock kept there is to be increased, some means will have to be devised to secure a water supply from a small river back of a small ridge from the house.

OPERATIONS.

Considerable attention has been given during the year to the establishment of permanent pasture grasses in lieu of the native, which die so readily during the dry season. A number have been planted, including Guinea grass, paspalum dilatatum, red clover, Dutch clover, oats, and Bermuda grass. The latter has given by far the best results as a pasture, while oats in the warmer season promise heavy yields of green forage.

The work has continued along the same lines mentioned in the last annual report. The lines of breeding include American and native horses, native cattle with imported bulls, Shropshire sheep, and Angora goats.

About 100 acres of unoccupied public domain in the Trinidad Valley adjacent to the Trinidad farm were fenced in to be used as a breeding pasture for outside stock. The plan has been to put pregnant mares and cows therein, and as soon as they have foaled or calved they were bred to the American sires kept at the farm by this bureau. It is this system which is largely responsible for the increased amount of breeding during the year.

LIVE STOCK.

One of the notable features has been the increased interest taken by the natives, especially the Igorots, in breeding their pony mares to the imported stallions kept at this farm. The number of mares bred increased from about 10 per month in October to more than 70 in March, which included return services.

In this connection the superintendent of the farm has castrated about 100 native stallions. If continued a few years, this will permanently establish the custom of castrating the native ponies instead of working them as stallions.

The live stock on hand at the end of the year consisted of 4 imported stallions, 11 imported mares, 27 native mares, 17 colts (American half-breeds and native) over 1 year old, 15 sucklings, 16 mature burros, 6 burro colts, 1 American jack, 2 imported bulls, 2 grade bulls, 34 native cows, 11 steers, 11 heifers, 9 work bullocks, 21 calves, 4 Angora goats, and 10 Shropshire sheep.

All of this stock has kept in good condition, and the losses by accident, such as falling over cliffs, has decreased as compared with former years.

During the year 2 American thoroughbred colts have reached maturity and have been broken to harness. While they are not of ideal type, they are the first production of the farm, and show the possibility of raising horses in this vicinity. A number of colts of pure American blood, half-breeds sired by Morgan or Arabian stallions out of native mares, and a few full native colts are coming to maturity, and will be broken to harness during the coming fiscal year. They appear promising, and it is to be hoped that some of them will prove valuable breeding stock for the future work of this bureau.

The burros, which did very badly for the past two years, seem to be doing much better now. The large jack from Missouri is being used on some of them in the hope of breeding smaller sized, suitable for mule breeding with the native mares in these islands.

The native cows bred to Galloway and Devon bulls have produced a good crop of calves, of which we now have three generations at this farm. A few of the older heifers have reached breeding age, are strikingly like their sires, and are being bred to imported bulls. As soon as this class of cattle increases sufficiently the original native cows will be sold.

The Angora goats imported from Australia have continued to do well. They have been provided with shelter and have not shown the bad effects of the

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rainy season like native goats. It is intended to purchase a supply of native females and to add to the flock during the coming year, with the view to breeding a large number of grades for distribution in the provinces.

The sheep imported from Australia have not thrived quite as well as the goats, but have done much better than the native sheep, probably owing largely to the shelter and attention given them. They have suffered from time to time with ulcers on their heads, flanks, and other exposed portions of the skin, probably owing to the irritating effect of biting insects.

ALABANG STOCK FARM.

LOCATION.

This farm is located at Alabang, on the Batangas line of the railroad, 22 kilometers from Manila. Three trains each day make it of easy access therefrom.

SOIL.

The soil is composed of a stiff clay, which is rather difficult to work, and is underlaid with a soft, shaly rock.

WATER SUPPLY.

Water for live stock was obtained during the past year by pumping from a small stream which runs through the farm near the buildings. During the dry season this water becomes very foul, and it is thought that this bad water was the cause of the death of some of the calves during the dry season.

An 8-inch artesian well is being drilled, which will furnish sufficient pure water for all purposes in the future.

OPERATIONS.

As this farm was intended primarily as a site for the serum laboratory, every effort was made to have the required buildings constructed with the least possible delay, in view of the failure to secure their erection the previous year.

As previously stated, this work has been very greatly delayed and at the close of the year it appears evident that more than three months longer will be required before the serum herd can be moved into the new quarters.

A large part of the work done on the farm during the year has been in the transportation of building materials, the quarrying of stone, the building of roads and fences, and the erection of buildings for which this bureau accepted contract from the bureau of public works. But little attention has been devoted to bringing the land into cultivation with a view to production of forage crops, or to conducting regular field experiments, on account of the pressing demands in other directions.

Most of the land is covered with a dense growth of cogon and talahib grasses, besides other rank weeds, and has not been in cultivation for more than ten years. The small plats which had been cultivated in rice up to the time this bureau acquired the property had been puddled according to the native method; consequently the clearing and breaking of the land with a view to planting crops has proved a very difficult task.

It was intended to use a steam plow, but some necessary repair parts were not received until near the beginning of the rainy season. A petroleum plowing engine was secured about the same time and a small amount of work was done with it. This has resulted in a comparatively small area being planted during this year. A piece consisting of about 2½ hectares was plowed in January and allowed to lie through the dry season. In June it was thoroughly disked and harrowed into good condition. It was then thrown up in beds 1 meter wide, with a liberal application of complete fertilizer, and planted with white velvet beans. As soon as these have reached maturity they will be rolled and turned under with a disk plow with a view to restoring the wasted organic matter in the soil.

Among the other forage crops successfully grown have been teosinte, sorghum, and broom corn. The very foul condition of the land and the fact that it has been greatly impoverished in places by the native method of cultivating rice have been serious obstacles in the way of securing adequate crops. Both the mechanical and chemical conditions of the soil must be greatly improved before satisfactory results can be expected.

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An experiment was made in the planting of nursery-grown trees in the fence line around the border of this farm with a view to ultimately using them as growing fence posts. Among the trees planted were kapok, Australian beefwood, eucalyptus, and rain tree (*Pithecolobium saman*). As the land where most of these trees were planted was very foul and the plantings were made mostly in the heaviest part of the rainy season, with an unusually severe dry spell immediately following, a large number of them died, but those which survived these conditions seem to be doing quite well. During the latter part of the rainy season kapok trees will be set out on all the fence lines. It will demand considerable labor for several years to protect them from fire, but if they can be saved they will furnish us with permanent fence posts.

LIVE STOCK.

The live stock at the close of the fiscal year was as follows:

One imported stallion, 10 imported mares, 2 native stallions, 14 native mares, 11 colts, 1 jack, 1 mule, 22 imported cows, 7 grade cows, 16 native cows, 32 calves, 2 imported bulls, 19 work bullocks, 7 Chinese heifers, 1 imported boar, 5 imported sows, 8 pure-bred pigs, 21 native hogs, 5 imported male goats, 20 imported female goats, and 20 native goats.

Horses.—It was not intended to begin horse-breeding work before the farm was fully equipped with buildings, water supply, paddocks, and pastures. However, a surplus of stock began to accumulate in Manila and at the Trinidad stock farm, which was sent to Alabang because of the available pasturage, and the tendency has been to constantly increase the number of horses there without particular reference to their selection for breeding purposes. In fact, some of the stock at this farm is in bad condition and will have to be condemned. The colts born there are thriving well, although the mothers get a large part of their feed in the pasture.

There is now a pressing demand for an outlet of surplus American horses from the Trinidad farm, and arrangements have been perfected for the transfer of 52 head of mares and colts to this bureau from the army. In view of the uncompleted condition of the building equipment we were totally unprepared to care for all of this stock up to the close of this year.

Cattle.—The dairy herd has been the most important line of work maintained during the year. The cattle have kept in good condition while being pastured on the native pasture grasses, and during a part of the dry season it has been found necessary to supplement this grass with some concentrated feed. More calves have been raised this year than last, which was probably owing to better pasture conditions as well as to care. They have been given a liberal supply of milk, which has made the amount furnished the civil hospital less than it otherwise would have been. During the dry season an epidemic of scours broke out among the calves, which was attributed to the bad water from the creek. They have now recovered, however, and are looking well. The total amount of milk furnished to the civil hospital from the dairy farm was 2,709 gallons.

A large number of the native cattle on hand consists of Chinese calves which had been used by the bureau of science in the production of vaccine, and were sent to this farm instead of being sold. This class of stock shows a great adaptability to conditions which prevail there and keep in excellent condition on the native grasses.

Goats.—The imported goats are thriving very well, living almost entirely upon the grasses found in the lowlands. Of half-breed young males, 7 have been sent out during the year to be used in crossing on native goats. Good results are being obtained by crossing our Maltese males on the native goats.

Hogs.—One of the most satisfactory branches of live-stock breeding at this farm was that of Berkshire hogs. They thrive well and breed regularly. Of young pigs, 30 have been sent away and 8 are being raised to replenish our own breeding stock. Boars have been loaned to parties in Biñan, Santa Rosa, and Calamba.

Some experiments have been started in pig feeding, to investigate the cost of growth, maintenance, and fattening with various native feeds.

Of pigs weighing from 18 to 30 pounds, 20 were obtained in the vicinity and tiqui-tiqui, corn, and copra meal are being used in feeding them. The experiment is still being carried on, and it is impossible to give a report at this time. As the native hog is much slower in coming to maturity and putting on flesh, investigation of this kind will take considerable time.

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Some feeding was done to determine the effect on the quality of the lard obtained by feeding copra meal. Two pigs are being fattened on ground corn and 3 on copra meal. The copra-fed hogs are fattening much more slowly than those receiving corn.

It has been observed that young pigs will eat clear copra meal almost as soon as it is offered them, but older ones have to be nearly starved before they will do so. A full report of these tests will be reported when the feeding is completed.

Owing to the fact that the present hog quarters are so muddy and unsatisfactory during the wet season it will be necessary to build as soon as possible a house of sufficient size to accommodate at least 12 brood sows with pigs and 2 mature boars.

Small animals.—During May the guinea pig and rabbit breeding work formerly carried on by the bureau of science and transferred to this bureau January 1, 1908, was removed to this farm. A light material house of suitable size has been constructed and these small animals appear to be doing much better there than they were at the former location at the San Lazaro Hospital. The quarters are located on a high rocky hill, where it is dry and the buildings get the benefit of the breezes from every direction.

The green forage required for feeding these animals is now produced on the farm instead of being purchased from contractors, as was formerly done in Manila.

Poultry.—No plans have yet been perfected for starting poultry work, but this will probably be undertaken during the coming year.

GENERAL STOCK-BREEDING WORK.

It is now almost five years since this bureau commenced furnishing stallions, bulls, boars, and other animals for breeding purposes in the provinces, by loan, sale, or otherwise. It has been constantly observed that the average person in the provinces takes little interest in the improvement of his live stock. There is no well-defined line of breeding, and the only premium of material value for improvement in this direction has been the high prices paid for racing ponies. Even this has failed to inspire most of the populace with the necessity for carefully selecting a sire and a dam with a view to producing a speedy pony. The race horses that are winning on the tracks in the Philippines are for the most part pure accidents, as most of them have been bred on the range and their sires are unknown.

It is customary now when a consignment of ponies reaches Manila for the owner to try each of them or have them tried by some track man, with a view to finding out if there are any among them that are promising for the track. However, a definite point of value, especially with reference to horses, has been presented during the last year. A 3-year-old colt out of a native mare, 51 inches high, and sired by an Arabian stallion formerly owned by the bureau of agriculture, was brought to Manila and sold for ₱1,600. He showed at a glance to be far superior to even the best average racing pony, and his present value is probably many times the price paid by the purchaser. Soon after this colt was sold, another one out of a native mare and sired by a Morgan stallion changed hands at something over ₱1,000. Both of these colts were bred in Batangas Province, and demonstrated to the owners of mares that as a business proposition it would prove profitable to breed to improved stallions. There was a corresponding demand for stallions in the province of Batangas, and as such demand did not exist elsewhere a representative of this bureau with the necessary help was sent there with 3 stallions and instructed to make a regular campaign through the principal horse-breeding sections thereof.

As a result, one of the stallions has had 79 services, one 64, and one 60, a total of 203. This is more than all of the services formerly rendered by all of the stallions sent to that province by this bureau during the past four years, and was accomplished in a period of less than eight months. Should a reasonably large percentage of the mares drop and raise foals it will mean a great boon to the horse industry of Batangas Province. It will also greatly stimulate horse-breeding throughout the islands, as Batangas is looked upon generally as the leading horse-breeding province of the archipelago.

The next largest service list was 52 by the stallion Montgomery Chief, used for breeding draft mares at the city stables in Manila. The total number of services rendered by the remaining 7 stallions was 349, making a total of 604 for the 11 stallions in service.

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The imported Australian bulls immunized against rinderpest have continued to do very poorly. Four additional bulls were imported from Townsville, Australia, with special instructions to secure them immune to tick fever. They were received during May and were carefully guarded against rinderpest and foot-and-mouth disease. When exposed to ticks two of them promptly died from the effects of tick fever and the other two are in rather poor condition.

Much better results have been obtained from the young half-breed Galloway bulls bred at the stock farm and sold or loaned to breeders in that vicinity.

The demand for breeding pigs continues unabated and this bureau is quite unable to meet the requests in this direction. A number of private parties have been induced to go into the pig-breeding business, and have been offering for sale a considerable number of pigs having more or less improved blood. These pigs sell readily at any time. This is one of the most promising lines of stock breeding which has been tested by this bureau and gives prompt returns.

A number of full-blood and half-breed male Maltese goats have been sold or loaned to parties in the provinces for breeding purposes. Two of the full-blood goats died, but the results have been generally quite satisfactory.

However, under existing conditions of disease among animals in the Philippines, there is not satisfactory encouragement for investing money and time in this business. Breeding can not be restored to its proper position among the agricultural industries until such severe diseases as surra, rinderpest, and hog cholera are under better control, and investments in stock breeding made correspondingly secure. The importance of accomplishing this result is particularly felt in the breeding of cattle and carabao, which are so extensively used for draft purposes all over the islands and determine largely the amount of products sold by the farmers of this archipelago.

Very respectfully,

G. E. NESOM,
Director of Agriculture.

The SECRETARY OF THE INTERIOR,
Manila, P. I.

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APPENDIX G.

REPORT OF THE DIRECTOR OF THE WEATHER BUREAU.

DEPARTMENT OF THE INTERIOR,
WEATHER BUREAU,
Manila Observatory, July 31, 1908.

SIR: I have the honor of forwarding to you my report as director of the weater bureau, covering the fiscal period from July 1, 1907, to June 30, 1908. It will be noticed that the general outlines followed in the preceding reports have been retained—the five chapters treating, respectively, of Manila Central Observatory, the secondary stations, the personnel, the financial status, and the difficulties encountered and plans under consideration.

Very respectfully,

JOSÉ ALGUÉ,
Director of the Weather Bureau.

The SECRETARY OF THE INTERIOR,
Manila, P. I.

I. MANILA CENTRAL OBSERVATORY.

1. DEPARTMENTS OF THE CENTRAL OBSERVATORY.

A. THE METEOROLOGICAL DEPARTMENT.

(*a*) *Employees and hours.*—The personnel of the meteorological department has been increased by one observer with a salary of ₱1,800 per year, but notwithstanding this the office has been continually short of men, owing to the increased amount of work entailed by the various improvements, chief among which are the daily weather maps and a more rigorous scrutiny of the reports sent in by the secondary stations.

The arrangement by which at least one observer is always on duty—even on Sundays and legal holidays—from 6 a. m. to 7 p. m., has been continued, except during the month of May, when the hours had to be extended until 8.15 p. m. The chief of the United States Weather Bureau has requested that an 8 p. m. observation be cabled daily to San Francisco, which was complied with, the service beginning May 1, 1908. But the great inconveniences, arising principally from our distance from the cable office, having been pointed out to Professor Moore, he cabled June 4 that we might send the 8 a. m. observation, which has been done ever since.

During the year the employees of the central office have put in one thousand three hundred and thirty-one hours of overtime.

(*b*) *Spreading of information within the archipelago.*—The promised assistant to be procured by the observer-telegrapher has not been forthcoming; for a while he came to practice, but then was seen no more. The present operator is indeed willing to come to the office at any time outside of office hours that he may be called upon, but this arrangement is not satisfactory and we should have an operator on duty all the time during which the central telegraph office is open, otherwise there will often be delay. The salary of the present incumbent, being that of an observer, ₱1,800, it is believed that 2 competent telegraph operators can be secured without an increase in expenses, though naturally enough the latter will lack the meteorological knowledge and the great experience of the former.

The promised connection of the observatory with the police telephone system, mentioned in last year's report, has likewise failed to materialize, for reasons unknown to this bureau. Luckily, there was little necessity for this means of communication during the past year, the only occasion on which the police were called upon to spread a typhoon warning having been the typhoon of October 26, 1907, which for a while threatened to become dangerous for Manila, but finally turned out to be a rather mild affair.

As regards to telephone service, Mr. P. J. Lynch, general manager of the Interisland Telegraph and Telephone Company, has conferred a great benefit upon the members of the staff of the weather bureau by having installed, rent

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free, an extension desk telephone, which enables the assistant director who acts as forecast official to answer inquiries about the weather without arising from his work. How great this convenience is may be judged from the fact that during the typhoon of last May 160 telephonic inquiries were addressed to the weather bureau in a single day. It is a pleasure to state that 94 per cent of these messages came from shipmasters and other persons having some interests at stake, and only 6 per cent were apparently due to mere curiosity or nervousness.

Provided that all the insular telegraph and cable lines are in working order, the daily weather notes and eventual storm warnings are being sent to the insular surveyor of customs (as officer in charge of the port), the quarantine station at Mariveles, the commander of the United States navy station at Cavite and Olongapo, and to 39 meteorological stations throughout the islands. Of these, 30 are on the various coasts and only 9 more or less remote from the sea. Besides at 20 of the more important telegraph stations through which the said messages pass on their way to the stations of the weather bureau, the operators are supposed to copy them as they pass the wire, post them for the benefit of the public, and give notice to the local authorities in case a typhoon warning implies danger to the place.

The consent of the insular collector of customs and of the commander of the naval station at Cavite having been first obtained, the sending of 3 and 2, respectively, daily observations to the officer in charge of the harbor and to Cavite was discontinued early in 1908.

(*c*) *Foreign cable correspondence.*—Owing to the generosity of the cable companies concerned, the meteorological observations made on the Bonin Islands have been added (September 20, 1907) to the list of foreign weather reports received by the Manila Observatory. Thus we receive at present two daily observations each from 21 foreign stations. Of these 10 belong to the Japanese meteorological service, 5 are situated along the Chinese coast, 4 on Formosa, and 3 in Indo-China. If it had been possible to arrange for two daily reports by cable from our own stations on Guam and Yap, the system would leave nothing to be desired. But our efforts to induce the Commercial Pacific Cable Company and the Deutsch-Niederländische Telegraphen-Gesellschaft to follow the example of the Eastern Extension, Australasia and China Telegraph Company and of the Great Northern Telegraph Company proved futile; a half rate was all that could be secured. But even with this reduction of 50 per cent the expense of daily cable reports would be too enormous. Hence, as stated in previous reports, the aforesaid stations cable their observations only when the weather conditions indicate the existence of a typhoon.

Your attention is again called to the immense service which the Eastern Extension and the Great Northern Telegraph companies have been for years and are still rendering to the various meteorological centers in the Far East, and through them to the shipping interests and the people in general. You are perfectly aware of the fact that the whole international meteorological cable correspondence in being handled absolutely free by the two companies mentioned. But though we realized that this correspondence was by no means small, we ourselves did not fully grasp its extent until Rev. G. M. Zwack, secretary of this bureau, undertook to make the computation for an article on the "Meteorological cable correspondence in the Far East," which he wrote for a monthly publication appearing in Manila. Counting everything which, according to the regulations of the cable companies, is to be paid for as a word, he found that the Manila Observatory alone receives over 66,000 words per year, all of which pass over the lines of the Eastern Extension, and by far the greater part also over those of the Great Northern Telegraph Company. Now, it must be remembered that Tokyo, Shanghai, Taihoku, Hongkong, and Phulien each receive a similar number of words, Manila contributing 9,400, which, as each is addressed to the five observatories mentioned, would have to be paid for as 47,000 words.

Aside from the regular daily reports to the said observatories, there have been sent during the past fiscal year 41 typhoon notices, each addressed to the centers mentioned, and also, according to an arrangement made years ago, to the United States consul-general at Hongkong, who gives them to the press. They have likewise been sent to the captain of the port at Macao. Hitherto these typhoon warnings have been couched in ordinary language; but with a view to reducing the number of words, the cable authorities requested the use of a code. Accordingly, a special code has been compiled, and went into effect July 1, 1908.

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(*d*) *Monthly summaries.*—The monthly summaries mentioned in last year's report as contemplated have been issued regularly since July, 1907. One of these, appearing a few days before the end of the month, gives the average meteorological data for the next month as deduced for Manila from many years' observations; the other, given out shortly after the close of each month, contains the data for the month ended, as resulting from observations made during the same. Hence, the latter is a résumé of the weather actually experienced at Manila, while the former shows what may, on the average, be expected.

In the beginning these reports were furnished to all the daily papers, but after it had become evident that only the Daily Bulletin, and La Democracia made use of them, their distribution was restricted to these two papers and to those government officials who desired them. Since they must be copied by hand we can not afford to furnish them as material for the waste basket.

(*e*) *Daily weather maps.*—Another plan entertained at the beginning of the fiscal year has been realized only in part. Two weather maps are daily drawn, each showing the atmospheric pressure, direction and force of the wind, amount of cloudiness, rain (if any), and the state of the sea at each station which reports these data by telegraph or cable. The first of these maps represents the meteorological conditions throughout the Far East at 6 a. m., and the second at 2 p. m. They are of the greatest value for forecasting and the subsequent study of typhoons. It was intended to exhibit the 6 a. m. map for the benefit of the public at the ayuntamiento, the post-office, the union ticket office, and the weather bureau. Suitable frames have been provided for the purpose, but the task of quadruplicating the map has been found to be far beyond our possibilities if it is to be done by hand. Demands for a daily copy have already been received and had to be denied. More would undoubtedly follow if it should become possible to multiply copies by a cheap and expeditious process. But no such process has hitherto suggested itself. We have not yet, however, given up all hope of devising means by which a limited number of copies can be made quickly and accurately.

The number of barometers compared and certified was 233. Most of them were aneroids, presented by Manila dealers.

B. THE ASTRONOMICAL DEPARTMENT.

(*a*) *Time service.*—The routine work of the astronomical department has been the same as reported for the preceding year. The correct time has been determined from frequent observations of star transits, and a considerable amount of care has been bestowed upon the transit instrument. The micrometer of the latter has been overhauled and improved, and whenever circumstances appeared to make it advisable, a new determination has been made of the instrumental constants.

Only 24 ships' chronometers have been presented at the observatory for the purpose of rating. This appears to be due to two causes: It is not generally known among ships' officers that the service is entirely gratis; and the chronometers of the United States Navy vessels are now rated at Cavite by means of the telegraphic time signal.

On several occasions ships lying at Guam requested time signals which would enable them to check the state of their chronometers. Of these demands two or three were made by cable ships and the rest came from ships of the United States Navy. These requests have invariably been compiled with, chronometers and observers being sent for the purpose to the office of the Commercial Pacific Cable Company.

(*b*) *The problem of synchronizing clocks.*—The last three reports mentioned the plan of synchronizing clocks by means of electricity. In order not to put the insular government to the expense of experiments which were not certain of proving useful, the first was tried, at our own cost, with the clocks of the observatory. For more than half of the last year various trials have been made, but no satisfactory results obtained. For some reason or other the magnificent Riefler clock, which we procured at a cost of ₱1,400 (exclusive of mounting and accessories), fails to come up to our expectations.

(*c*) *Astronomical data.*—At the request of the advisory board of the city of Manila, the times of rising, meridian passage, and setting of the moon for Manila have been computed for every day of July and August, 1908, and furnished to the said board. This information was desired by them in connection with their suggestion that the electric street lights be extinguished during such nights or portions thereof as the moon is above the horizon of that city.

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C. THE SEISMIC DEPARTMENT.

(*a*) *Microseismic movements.*—During the year the microseismographs of the Central Observatory registered 227 seismic disturbances sufficiently distant to reach Manila only as microseismic movements. Of these 187 had their epicenters either within, or at least in the neighborhood of the archipelago; 25 emanated from centers whose distances from Manila varied between 1,000 and 4,000 kilometers, while 15 indicated earthquakes at distances exceeding 5,000 kilometers.

(*b*) *Perceptible earthquakes.*—During the same period 153 perceptible earthquakes have been reported from the different regions of the archipelago. This number is 27 in excess of those which occurred during the preceding year, but, as a rule, the shocks have been less severe. Only one violent quake has been recorded, which took place on November 24, 1907, in Ambos Camarines, southeastern Luzon, but was confined to the eastern portion of the region devastated by the earthquakes during April, 1907. (See Monthly Bulletin, April, 1907, pp. 170–177.)

Of the 153 shocks mentioned as perceptible within the archipelago only 6 have been felt at Manila.

(*c*) *The horizontal pendulum seismograph.*—The microseismograph of two horizontal pendulums, the construction of which by our mechanics was reported last year, and which is destined especially for the registration of far-distant earthquakes, has given great satisfaction. Still, as it is homemade and contains several departures from the usual construction of this type of seismographs, there were some misgivings as to its relative sensitiveness. These doubts have been set at rest by Rev. Miguel Saderra Masó, who, while on leave of absence, visited the principal meteorological observatories on the Chinese coast and in Japan, in order to study their equipment and methods. He found that on several occasions our instrument had shown itself superior to those of the same type built in Germany and Italy.

Various experiments have been made with damping devices applied to this seismograph. Whenever the microseismic waves are of sufficient intensity, the records are undoubtedly improved by these contrivances, which cut out other disturbing influences, chief among which is the period of the pendulum; but, on the other hand, the sensitiveness of the apparatus is diminished to such a degree that the instrument will not respond to very weak waves. The solution of the difficulty lies evidently in the use of two instruments of the same type, one of which is provided with a damper while the other is not.

(*d*) *Advance reports.*—As regards the spreading of seismological information, an important improvement has been made by the introduction of advance reports. Owing to several circumstances, some of which are not under our control, the Monthly Bulletin is considerably behind time. Hence the seismological data obtained at Manila reached the foreign scientists later than was desirable. A great deal of this delay is now done away with by preparing a monthly seismological bulletin at the expiration of each month, manifolding it by means of the Roneo, and sending it to the more important seismological observatories of the world, 32 in number.

Though fairly complete, this advance report is necessarily of a preliminary nature, since it contains, in addition to the records of the microseismographs of the central office, only the reports of those stations which are in telegraphic communication with Manila. As to the rest, mail reports from some of the most isolated stations have been known to arrive from four to six weeks after the close of the month, and in single cases, for instance from Santo Domingo, Batanes Islands, months after, without blame attaching to anybody.

A number of originals of microseismograms have been requested by and forwarded to foreign scientists for the purpose of studying the earthquakes in Mexico, Italy, and Formosa. Though we were loath to intrust these precious records to the mails, international courtesy required that the requests be complied with.

D. THE MECHANICS' SHOP.

For a great part of the year work in the mechanics' shop has been hampered by the absence of the chief mechanic, due to illness, which finally made his separation from the service necessary. The loss of this employee, Mr. Cesario Ubaldo, is keenly felt, as he was very faithful and exceedingly skillful in very delicate work. The remaining mechanics, together with the temporary employees engaged toward the end of the year, have been occupied almost exclusively with the care of the numerous instruments of the Central Observa-

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tory and the cleaning and repairing work required by it and the secondary stations. Whatever time was left over has been employed in work upon a number of recording rain gauges. These instruments are greatly needed, but their price was found prohibitive. Constructed as stated, they will not be finished for some time to come, but their cost will not be very high.

A small but very useful instrument made in our shop will be found mentioned under the heading "Improvements."

NOTE: THE CROP SERVICE.

During 1907 the bureau of agriculture organized a crop-reporting system and has been receiving regular reports since June, 1907. Since January, 1908, the same bureau has been publishing a monthly bulletin, The Philippine Agricultural Review, of which crop statistics are a feature. In the firm conviction that the bureau of agriculture is more competent to handle this matter than the weather bureau, and, moreover, with the desire to avoid useless duplication of work, the latter asked to be relieved of the crop-reporting service imposed upon it by Act No. 131. The Philippine Legislature acceded to this request by amending the said act in such manner that it no longer includes crop reporting among the duties incumbent upon the weather bureau. (Act No. 1833, enacted May 21, 1908.)

As it appeared very undesirable to alter the form of the Monthly Bulletin of the weather bureau by omitting the Crop Bulletin from the numbers corresponding to the last months of 1907, the latter will be retained until the Bulletin for December of the said year, inclusively. This seemed so much the more advisable, as the first number of the Philippine Agricultural Review corresponds to the month of January, 1908.

2. IMPROVEMENTS, CENTRAL OBSERVATORY.

The improvements made in the equipment, etc., have been neither as numerous nor as costly as usual.

(*a*) *Compensating pyrheliometer* (*Angström*).—Following the recommendation of the international conference of directors of the meteorological services, held at Innsbruck in September, 1905, the observatory procured, at a cost of ₱312, an Angström compensating pyrheliometer for measuring the total radiation of the sun. But being constructed for the conditions as they are found in middle and northern Europe, the instrument failed under the pressure of the electric current necessary to compensate the effect of the sun's rays at Manila, and the resistance burned out. It is, however, hoped that resistances can be procured which will stand the required amount of current.

(*b*) *Fuess barometer.*—Our collection of mercurial barometers has been enriched by the acquisition of a new type by Fuess, of Berlin. This instrument is a combination of the siphon and cistern barometer, very accurate, and easily portable, hence eminently suited for trips of inspection. Its price is ₱130, only ₱20 more than that of a first-class Fortin barometer.

(*c*) *Alarm attachment to the Sprung-Fuess barograph.*—This instrument, which is very insignificant in appearance, but has already saved the staff of the weather bureau several anxious and therefore restless nights, originated in the observatory. Its purpose is to ring an alarm bell whenever the barometer takes a sudden plunge and reaches a height which might be indicative of danger. The idea of attaching a device of this kind to the barograph was conceived by Rev. José Coronas, but the instrument as constructed is the product of Mr. Roman Trinidad, assistant mechanic, who vastly improved the plan furnished to him. It has proved entirely satisfactory. A full, illustrated description, which will enable every intelligent mechanic to duplicate the apparatus, has been published by Rev. George M. Zwack in the Bulletin for October, 1907.

3. PUBLICATIONS.

A. ORDINARY PUBLICATIONS.

Under this heading come the Monthly Bulletin and The Annual Report.

(*a*) *The Monthly Bulletin.*—I regret very much having to report that, despite all efforts to the contrary, the publication of the Bulletin has fallen back still further during the present year. The number corresponding to October, 1907, is still in the hands of the printer, the manuscript for the November number has been sent, June 30, while that for December is in preparation. This state of affairs is largely due to the addition to the Bulletin of a large amount of information which renders the same more complete and at the same time reduces the annual report to a less unwieldy size. This change is con-

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sidered a decided improvement in the method of publishing the results of observations. Another improvement, introduced likewise beginning with the number for January, 1907, consists in separating the contents of the Bulletin into three sections—Meteorological Bulletin, Seismic Bulletin, and Crop Bulletin. In each section the Spanish translation is given after the English text. This arrangement is not only more logical and elegant than the former, but renders the publication more convenient for use, especially since the Spanish translation contains neither tables nor illustrations, which, therefore, have to be seen in the English text.

(*b*) *The annual report.*—During the year the annual report for 1905 has been printed and distributed. The hope expressed last year—that it would be possible to publish also the report for 1906—has not been realized. Its printing would have delayed the Bulletin still further, and there were no funds available for the purpose.

B. EXTRAORDINARY PUBLICATIONS.

(*a*) *The Rainfall in the Philippines*, by Rev. Miguel Saderra Maso, assistant director of the weather bureau. This pamphlet of 32 pages, which was distributed early in the fiscal year, is an interesting study of the amount and seasonal distribution of the rainfall in the archipelago, based upon all the information gathered since the beginning of the Manila Observatory, in 1865.

(*b*) "*Typhoon warning code of the Manila Observatory*," prepared by Rev. Jose Coronas, assistant director of the weather bureau (88 pages, with map of the Far East). As mentioned before, typhoon warnings to foreign parties had always been sent in ordinary language, but on December 17, 1907, the general manager of the Eastern Extension, Australasia and China Telegraph Company for these regions, requested that the Manila Observatory adopt a code for this purpose, as Shanghai and Hongkong had done before. Since the messages are being transmitted gratis, this request amounted to an order which could not be disregarded. Moreover, it was so evidently fair that it was complied with cheerfully, though it involved a somewhat heavy expense and a great amount of work. The new code, constructed on the lines of the one used by the Hongkong Observatory, is very complete, and will likewise serve for the sending of typhoon warnings to our own stations. It went into effect July 1, 1908, as regards foreign correspondence, while for the stations of the weather bureau it will be used on and after August 1.

(*c*) *Publication of old observations.*—In last year's report there was mentioned the plan of printing those observations of former years which, owing to the absence of the director, to sickness, political disturbances, and other causes, have never been printed. During the year there have been published the observations made in 1874 and part of 1875, the "Bulletin" for November, 1875, being in the hands of the printer. The cost of this publication is borne by the observatory.

II. SECONDARY STATIONS.

(*a*) *Changes.*—The changes in the distribution of the secondary meteorological stations have been very numerous. The required authorization having been obtained, the third-class stations at Arayat, Malolos, Nueva Caceres, and Balingasag have been transferred, respectively, to Echague, Laoang, Virac, and Cagayan de Misamis. The reason for the last-mentioned change is found in the fact that Cagayan has telegraphic communication, which Balingasag is lacking. As to the others, a cursory glance at a map of the islands shows that the new positions substituted are strategically much more important than those formerly occupied. Thus, Echague represents an effort to cover the gap between San Isidro and Tuguegarao, while Laoang and Virac feel the effect of an approaching typhoon much earlier than Nueva Caceres and Malolos. A third-class station has been established at Laoag, the capital of Ilocos Norte. This was made possible by suppressing the rain station at Porac and reducing the less important station at Candon from third class to a rain station. The third-class station at Caraga had to be given up, since the observer, who had persevered there for several years, finally declared that he would rather resign than stay any longer. In order not to lose the services of a faithful employee, he was transferred to Virac. No other observer is willing to go to the out-of-the-way place thus vacated.

(*b*) *Stations in existence on June 30, 1908.*—At the close of the fiscal year there were in existence 7 first-class, 9 second-class, 26 third-class, and 10 rain stations, a total of 52 secondary stations, the same number of each class as

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reported the preceding year. Their distribution is shown in the following table.[a]

(c) *Voluntary stations.*—The voluntary station in connection with the provincial school at Dumaguete, Oriental Negros, which has been mentioned repeatedly in these reports, has come and gone during the past fiscal year. On October 2, 1907, the secretary of the weather bureau went to Dumaguete with the instruments to establish the station and give the necessary instructions to the prospective observer. But after a few months the said gentleman found the work a good deal harder than he had expected, and as the bureau was not in the position to make the station official, observations were suspended. Happily, the expenses incurred were not entirely wasted, as the question of a new transfer of the station at Iloilo made it highly desirable that a member of the central observatory's staff talk the matter over with the provincial authorities.

The United States army posts at Malabang and Parang sent their observations with the regularity to be expected from officers. The same may be said of the gentlemen of the forestry bureau stationed in Mindoro and of Rev. Manuel Valles, S. J., the chaplain of the Culion leper colony.

When the station at Caraga had to be given up in October, 1907, the Jesuit missionaries at Baganga took charge of the instruments, but no observations have been received since the beginning of 1908.

A rain gauge and a set of thermometers have been furnished to a gentleman living some 30 miles from Baguio, at an elevation of about 2,135 meters (7,000 feet) above sea level. Unfortunately, the observations are of an intermittent character.

On the whole, it may be stated that voluntary stations are far from being a source of unalloyed pleasure. Unless the instruments are placed in the hands of United States officers or officials of the insular government, it is very doubtful whether the gain outweighs the expense and trouble.

(d) *Inspection of stations.*—Only one trip has been made for the special purpose of inspection. Some doubts having arisen about the observer at Corregidor, Mr. Dulueña, observer at the central observatory, was sent to look into the matter. Though he came perfectly unannounced, he found the man at his post and things in a good condition; some instructions were all that was needed.

Iloilo has been inspected incidentally by Father Zwack on the trip already mentioned and things been found perfect. On the occasion of his going to Laoang, Samar, to establish the station, Mr. Dulueña improved the opportunity offered by his enforced stay at Iloilo to make another inspection. He likewise visited Cebu and Tacloban, where he found everything very satisfactory. Less pleased was he with Calbayog, where there was a lack of cleanliness. At Catbalogan house cleaning was in progress, wherefore no idea could be formed as to how things looked under normal conditions. He found, however, that the surface of the mercury in the cistern of the barometers was oxidized, which is no fault of the observer. This defect has since been remedied by having the barometers sent to the central office, where they have been overhauled. As has been stated on a former occasion, Catbalogan is a voluntary station in charge of the district health officer, Dr. G. J. Cullen, but is always enumerated among the regular stations. He is an enthusiastic observer, but owing to his frequent absence on official duty the observations are not sufficiently complete for the purpose of publication.

III. Personnel of the Weather Bureau.[b]

IV. Expenses of the Weather Bureau.

The following is a statement of the expenses of the weather bureau for the fiscal year ended June 30, 1908:

(a) *Credits on the books of the insular auditor.*

Part balance of fiscal year 1907 retained	₱1,836.00
Appropriation for fiscal year 1908, Act No. 1679	123,500.00
Credit on interbureau vouchers	84.58
Credit by refund to appropriation	.60
Total credit	125,421.18

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

[b] This chapter has been omitted and filed in the Bureau of Insular Affairs, War Department.

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(b) Debits on the books of the insular auditor.

Salaries and wages	₱70,360.62
Printing and binding	18,183.71
Telegrams and cablegrams	17,158.64
Postage, official correspondence and publications	1,334.72
Transportation of persons and freight, per diem	959.21
Rent of offices and instruments	9,000.00
Instruments, furniture, and supplies	2,726.54
Installations and repairs, secondary stations	277.89
Miscellaneous expenses—electric current, telephones, etc	2,089.68
Total debits	122,091.01

Hence there remains on the said books a credit balance of ₱3,330.17.

(c) Liabilities taken over from the fiscal year 1907.

Out of the ₱1,836 retained of the balance of the fiscal year 1907, the following liabilities pertaining to the same fiscal period have been paid:

Salaries and wages	₱86.50
Instruments	1,033.47
Furniture and supplies	65.14
Miscellaneous expenses	21.26
Total	1,206.37

Hence the aforementioned credit balance of ₱3,330.17 includes a balance of ₱629.63 pertaining to the fiscal year 1907 not available for expenditure on account of the fiscal year 1908, wherefore the true balance to the credit of the weather bureau is ₱2,700.54.

On the other hand, the total debits must be diminished by the amount of ₱1,206.37 expended on account of the preceding fiscal year, whence the payments made on account of the fiscal year 1908 are found to have been ₱120,884.64. Hence:

Payments on account of fiscal year 1907		₱1,206.37
Payments on account of fiscal year 1908		120,884.64
Balance of fiscal year 1907		629.63
		122,720.64
Balance of fiscal year 1908		2,700.54
		125,421.18

(d) Unpaid liabilities, fiscal year 1908.

Against the credit balance of ₱2,700.54 still on the books of the insular auditor at the time of closing them must be placed the following liabilities arising from transactions belonging to the fiscal year 1908:

Salaries and wages		₱167.49
Printing and binding (about)		900.00
Bureau of supply (probable amounts according to catalogues):		
Requisition, February 7 (United States of America)	₱1,100.00	
Requisition, February 7 (France)	1,030.00	
Requisition, June 1 (Manila)	400.00	
Surcharge of 10 per cent and freight on above	330.00	
		2,860.00
Miscellaneous small accounts		85.10
Total liabilities		4,012.59

Hence:

Liabilities to be met	₱4,012.59
Funds available	2,700.54
Apparent deficit	1,312.05

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The above deficiency is called "apparent" because it is more than covered by postage stamps to the value of ₱1,936.62 which were in the possession of the bureau on July 1, 1908. These being strictly the equivalent of cash on hand, must be deducted from the payments made, reducing them from ₱120,884.64 to ₱118,948.02. Adding to the latter the amount of unpaid liabilities, we obtain ₱122,960.61, which represents the true amount of expenses for the fiscal year 1908.

Summary.

Funds available for the fiscal year 1908	₱123,585.18
Payments and unpaid liabilities, fiscal year 1908	122,960.61
Balance	624.57

V. Difficulties and Plans.

1. difficulties.

(*a*) *Weather dispatches.*—Telegraphic communication continues to be a source of annoyance. We have no grievance against the postal authorities, as both the director of posts and the superintendent of telegraphs have always been found willing to do all in their power to aid the weather bureau. But with the best of wills they can not prevent breaks in the cables nor repair them promptly. It is a matter of public comment that Zamboanga and Jolo have been cut off for months.

The fact that the land lines usually snap at the first serious onslaught of a typhoon has been pointed out on a former occasion. Nothing else could be expected by anyone who is familiar with the country over which some of the wires pass, and the promptness with which communication is reestablished after each storm is certainly praiseworthy. But the fact remains that in the meanwhile the central observatory is cut off from the storm field at precisely the most critical moment. These remarks are not meant to imply criticism, nor can I suggest a feasible remedy, but they are merely intended as a statement of difficulties with which the weather bureau has to contend.

While the fact that the weather telegrams from some stations have to be relayed repeatedly accounts sufficiently for their tardy arrival at Manila, it is feared that in other cases this is due to a failure on the part of the operators to comply with the order directing them to give the weather dispatches precedence over all but the most urgent business.

Another cause of delay is the unwillingness of some telegraphers to be disturbed in their siesta for the purpose of sending the 2 p. m. observation to Manila. Several observers have thus explained the delay of their reports. However, that this trouble has not been remedied immediately is the fault of the central observatory, which failed to bring the matter to the attention of the director of posts.

Telegraphic communication is especially difficult on Sundays and legal holidays. Should a typhoon present itself on one of these days close to the east of the archipelago after the 10 a. m. observations have been transmitted to Manila it would be practically impossible to warn the threatened regions earlier than the next morning, when it would presumably be too late. From the reports, or rather excuses, of our observers it would appear that on such days the majority of operators do not begin their afternoon work before 4 p. m., and in consequence the 2 p. m. observations reach the central observatory between 4 and 6 p. m., instead of between 2 and 4. As many of the telegraph stations in the provinces close again at 5.30 p. m., it is clear that no warning can be gotten through until they open again the next morning.

We are fully aware that under present circumstances it is impossible to attain the regularity of the telegraphic service which is enjoyed by the United States Weather Bureau; nor do we pretend that the office hours of the provincial telegraph stations should be changed on account of the weather bureau. We consider it necessary, however, to call attention to existing conditions and to point out beforehand that in such cases the weather bureau could not be held responsible for accidents arising from failure to forewarn. Typhoons do not respect either the day of the Lord or the laws creating holidays; nor are they particular about having their coming announced before they strike.

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The "code for the telegraphic transmission of weather notes and warnings" issued in 1906 proves daily more and more inadequate. This is largely due to the fact that the vastly improved promptness in the arrival of the foreign weather dispatches and the introduction of daily weather maps permit of making a more detailed forecast. The only remedy lies in the compilation of a new code on the same lines as the "Typhoon Warning Code of the Manila Observatory." This work is actually in progress.

(*b*) *Wireless telegraphy.*—The apparatus for wireless telegraphy, which was constructed during the preceding year for the purpose of communication with the United States naval vessels at Cavite and other ships equipped with the necessary instruments, has not yet been utilized. There is evidently an immense difference between laboratory experiments and a practical working installation. It will probably be necessary to appeal to the army or navy for the assistance of an expert in the work.[a]

(*c*) Scarcity of competent third-class observers.

(*d*) Leave of absence of first and second class observers.

2. PLANS.

A. STANDARD NORMAL BAROMETER.

I had hoped to be able to announce that the Manila Observatory had acquired a standard normal barometer. On July 22, 1907, I sent a letter to Mr. R. Fuess, Berlin, one of the best-known makers of instruments of precision, giving specifications and inquiring about the price of the best instrument he could construct. While no fancy work was desired, no cost should be spared to make the barometer as perfect as modern skill and knowledge could make it. The price asked was ₱1,130, exclusive of packing, freight, and insurance, and there were not included the airtight testing chamber and other accessories, which probably would have brought the total cost to ₱1,600. Happily, there was some doubt about the specifications, and in the meantime it occurred to us to consult the chief and staff of the United States Weather Bureau about the plan. The reply written by Professor Marvin, of that bureau, an expert on meteorological instruments, was to the effect that the contemplated apparatus might be excellent for fundamental physical research work, but was unnecessarily elaborate and costly for the practical purpose in view. Professor Marvin holds that a Fuess barometer of the kind which we already have is sufficient to meet our needs, and that the costly cathetometer will not increase the accuracy, provided, of course, that the scale of the barometer has been tested rigorously and found correct. At the utmost we might procure another model by the same maker which is provided with levels and microscopes. It is intended to follow this advice and to purchase a barometer of the latter type, which, together with testing chamber and accessories, will probably not cost much above ₱900, to be paid from our own resources.

B. INSTRUCTIONS FOR OBSERVERS.

For some time past the lack of printed instructions for observers has been felt very keenly. Several small pamphlets have, indeed, been issued (1881, 1884, and 1901), but they are out of print, and at any rate would not meet the present needs, especially as they were intended to be merely preliminary. To remove the difficulty, Rev. Miguel Saderra Maso, assistant director of the weather bureau, has compiled full instructions, which will be printed during the coming year at the expense of the observatory. While at present the majority of our observers in the provinces do not understand English, but are more or less conversant with Spanish, these instructions are written in the latter tongue, and it is foreseen that this state of affairs will be reversed within a few years; wherefore it has been decided not to burden the insular revenues with the cost of the publication.

C. SPECIAL TELEGRAPH LINE TO THE CABLE OFFICE.

In order to still further expedite the receiving and sending of cablegrams, negotiations have been carried on with the Eastern Extension, Australasia and China Telegraph Company for a special telegraph line connecting the central

[a] Chapters on the following subjects have been omitted and filed in the Bureau of Insular Affairs, War Department:

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observatory with the office of the said company. The consent of the general manager was easily obtained under the conditions that neither the construction nor the upkeep of the line would entail any expense to the company, that the line would not be used for any other purpose than the transmission of cablegrams from and to its lines, and that it would be removed at the request of the company. Thereupon request was made to the head of our department for the necessary authorization, which was given on May 29. But as the insular purchasing agent has hitherto been unable to obtain the necessary instruments, the plan could not be carried out before the end of the fiscal year 1908.

D. METEOROLOGICAL AND GEODYNAMIC OBSERVATORY AT BAGUIO.

(*a*) *Building.*—During May, 1906, the Society of Jesus bought a property within the town site of Baguio, Benguet, containing approximately 76.5 acres. This tract includes Mount Mirador, on which it was proposed to erect a large building for the double purpose of a sanatorium for the members of the order in the Philippines, and of a meteorological and geodynamic observatory. The building was actually begun in October, 1907, and was already under roof at the beginning of the Benguet rainy season of 1908. It is a stone structure, 164 feet long—exclusive of kitchen and other outbuildings—and 46 feet deep, the walls being 19.7 feet high. Aside from the apartments for common use, there are 30 private rooms. Two towers flanking the front will contain the scientific apparatus, office, and sleeping quarters for the employees of the observatory. Of course no rent will be charged for the apartments occupied by the latter.

(*b*) *Equipment.*—Several very fine instruments are on hand wherewith to equip the new observatory, which will be rather a branch of the Manila Central Observatory than a secondary station. Some of these instruments were bought for the St. Louis World's Fair and are government property; others belong to the Manila Observatory. It is hoped that the interior of the building will be finished and most of the instruments installed by January, 1909.

(*c*) *Work planned.*—Besides the usual meteorological observations required of first-class stations of the weather bureau, the following special investigations are contemplated: Variation of the rainfall, humidity, temperature, and evaporation with varying height; differences of temperature and evaporation on the windward and leeward slopes; and seismological observations covering far distant and local earthquakes.

(*d*) *Personnel required.*—The great number of observations to be made and of recording instruments to be attended to, will require a larger number of employees than is assigned to first-class stations, which consists only of the chief observer and one assistant. The new observatory will need the following personnel: One chief observer, at ₱1,200; 1 mechanic, at ₱840; 1 third-class observer, at ₱360; and 1 assistant, at ₱200; a total of ₱2,600 per year. But as there is already a third-class observer stationed at Baguio, the additional expense would be only ₱2,240.

Moreover, the director of the weather bureau should be authorized to detail at any time a member of the staff or any employee of the central office for service to Baguio, whenever the efficiency of the work or some special investigation requires such action.

(*e*) *Funds necessary.*—No provision has been made for the new observatory in the appropriation bill for the fiscal year 1909. It is, however, believed that, owing to the reduction in telegraphic expenses which is certain to result from the new code which is being prepared, there will be a sufficient balance to cover the expenses for the six months, January to June, 1909, provided authority can be obtained to use the funds for the purpose stated.

(*f*) *A future possibility.*—Mount Mirador would be a very convenient site for a wireless station from which to distribute typhoon warnings over the China Sea, but until Baguio is provided with an electric power plant the cost will be prohibitive.

JOSÉ ALGUÉ,
Director of the Weather Bureau.

THE SECRETARY OF THE INTERIOR,
Manila, P. I.

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REPORT OF THE SECRETARY OF COMMERCE AND POLICE.

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REPORT OF THE SECRETARY OF COMMERCE AND POLICE.

DEPARTMENT OF COMMERCE AND POLICE,
Manila, October 22, 1908.

GENTLEMEN: I have the honor to make the following report of the operations of the various bureaus of the department of commerce and police for the fiscal year ended June 30, 1908:

COMMERCE.

There still exists a general tendency—particularly in commercial circles in Manila—to complain of hard times. In the last annual report of this department it was stated that commerce had taken a decided turn for the better; that the tone among the merchants in Manila was more settled and more optimistic; and that this was not to be taken as indicating a condition of real prosperity, but as a good sign for the future. Two things, however, during the year 1908 have somewhat retarded the progress toward real prosperity.

The first of these is the shortage in the rice crop, due to the drought which caused the rice importations to rise from ₱7,324,986 to ₱11,722,512, an increase of 60 per cent. In the previous year there was a decrease of 16.3 per cent from 1906, and since 1904 there has been a steady annual decrease in importations, as may be seen from the following table:

Rice importations since the American occupation, by fiscal years:

1899	₱3,878,244	1904	₱23,097,628
1900	6,226,846	1905	14,913,476
1901	10,981,916	1906	8,751,000
1902	13,156,962	1907	7,324,986
1903	20,122,646	1908	11,722,512

It is unfortunate that this shortage occurred at this time and made it necessary to send ₱11,722,512 out of the islands for the purchase of the staple food commodity of the people, which the country is easily capable of raising in quantities not only sufficient for its own needs, but also for export. The partial failure of this crop emphasizes more than ever the great need for extensive irrigation systems in the country. Since the American occupation there has been expended ₱120,176,216 for the importation of rice, one-half of which sum expended during that period of time for extensive irrigation systems would have put the country to-day in the position of exporting rice instead of importing it.

The second setback to commercial prosperity was the fall in the price of hemp. The hemp exported for the fiscal year 1908 exceeded that of the previous year by 1,110 tons (an increase of 0.9 per cent), but the total value was ₱34,623,616, a falling off of ₱7,546,546 (18 per cent) from the year before. The average decrease of the price of a ton of hemp will thus be seen to be ₱70.30 (18.8 per cent). As hemp is the principal export of the islands, this falling off in price has caused a general gloominess among the commercial houses.

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To offset these two discouraging features, however, we find that sugar exports rose from ₱7,869,396 to ₱11,329,496, an increase of 44 per cent, and copra from ₱8,106,386 to ₱10,923,360, an increase of 35 per cent.

The following table shows the exports and imports for the ten fiscal years since the American occupation:

Year.	Imports.	Exports.	Total.
1899	₱26,233,134	₱29,280,334	₱55,513,468
1900	41,202,876	39,642,694	80,845,570
1901	60,552,400	46,444,696	106,997,096
1902	64,058,714	49,089,716	113,148,430
1903	65,956,890	66,300,240	132,257,130
1904	66,442,502	60,452,254	126,894,756
1905	61,758,096	64,711,730	126,469,826
1906	51,598,580	63,837,084	115,435,664
1907	57,572,126	67,443,584	125,015,660
1908	61,837,490	65,659,632	127,497,122

From this it will be seen that the total commerce of the islands last year was greater than for any year since American occupation except 1903, and that the exports were greater than those of any other years except 1903 and 1907. The exports, as a whole, can not be said to have shown any great falling off, as the gain in sugar and copra largely made up for the loss in hemp values.

The reduction in the price of hemp seems to have been compensated for by the rise in sugar and copra, and the value of the imports and exports shown in the above table would seem to indicate that the commerce of the islands as a whole has not received any material setback. The exports for the last year, while they show a falling off of 2.7 per cent from the year before, were much higher than for several preceding years, are 28 per cent more than the greatest exports of any year under the Spanish Government from 1885 to 1894, when the highest figure was ₱51,342,644, including gold and silver coin, and 59.7 per cent higher than the average annual exports from 1885 to 1894, during which years there are official Spanish statistics.

The rice crop seems to have passed the danger point, and present indications are that the yield of rice will be larger than that of any other year since American occupation.

In view of all this, I can not believe there has been any considerable backward movement, although the coming of really prosperous times is still deferred. Prosperity worthy of the country and its resources will not come until extensive road construction has been completed, irrigation works on a large scale installed, a revision of the sugar and tobacco tariff with the United States accomplished, the present authorized railroad lines in full operation, and until adjustment has taken place between the old and the new economical conditions, spoken of in detail in the report of the secretary of commerce and police for the year 1906.

CHANGES IN THE DEPARTMENT.

The most important change in the department during the year was the creation by Act No. 1868 of the Philippine Legislature of a bureau of labor. The act, in brief, states the purposes of the bureau to be—

(*a*) To see to the proper enforcement of labor laws.

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(*b*) To acquire and compile labor data and information.
(*c*) To inspect factories and centers of labor.
(*d*) To secure settlement of differences between employer and laborer.
(*e*) To organize employment agencies.

The bureau is to have a director, at a salary of ₱7,000, and an assistant director, at a salary of ₱4,000 per annum. No appointments have been made as yet and no work has been done.

Act No. 1796 of the Philippine Commission amplified the duties of the director of navigation, especially in regard to harbor and navigable river improvements, superseding the general authority given by Act No. 584 to the director of public works "to have charge of any reconnoissances, examinations, surveys of river and harbor improvements."

By Act No. 1854 of the Philippine Legislature a division of irrigation was created in the bureau of public works, for further information and details of which attention is invited to the subheading of irrigation in this report.

BUREAU OF CONSTABULARY.

Cost.[a]

The total expenditures of the bureau of constabulary were ₱3,503,977.21, as compared with ₱3,176,447.17 for the fiscal year 1907, an increase of 10 per cent.

The total receipts were ₱211,468.10, as compared with ₱113,751.33 for the fiscal year 1907, an increase of 86 per cent, making the net cost ₱3,292,509.11, as compared with ₱3,062,695.84 for the fiscal year 1907, an increase of 7½ per cent.

The appropriation was ₱3,050,500, as compared with ₱3,068,000 for the fiscal year 1907, a decrease of nearly 0.6 per cent.

The appropriation for 1909 is ₱3,075,000, an increase over 1908 of 0.8 per cent.

For the year 1907 there was also appropriated ₱100,000 for permanent barracks and quarters, and for 1908 another ₱100,000 for the same purpose. Of these appropriations ₱97,158.07 had been spent at the end of the fiscal year. These figures are independent of the expenditures and appropriations above mentioned.

Force.

The force at the beginning of the fiscal year was 4,748 men and 305 officers, and at the end of the year 4,607 men and 321 officers, of whom 7 are detailed from the United States Army, a decrease in the number of men of 2.9 per cent and an increase in the number of officers of 5.2 per cent.

Since February 20, 1908, when Gen. H. H. Bandholtz, director of constabulary, went on leave of absence, Col. J. G. Harbord has ably filled the position of acting director.

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[a] In the remainder of this report all figures relative to the cost of bureaus and, under the bureau of public works, all figures relative to road and bridge income and expenditure are from the auditor's report for 1908.

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Friendly Relations.

The friendly feeling toward the constabulary referred to in the last report has continued to grow and no substantiated cases of abuse have been reported this year. The provincial governors, with one exception, unite in saying that they need the constabulary now on duty, and many of them urge an increase in the provincial contingent, which, if granted, would mean an increase of 13 companies.

Progress During the Year.

The quality of the officers is improving; an important step toward efficiency being taken when the Legislature abolished the grade of subinspector. The number of officers is less than it should be, however, and does not give the proper proportion of officers to men. The number of enlisted men is also too small. The nominal size of a company is 50, but for two years appropriations have been insufficient to maintain more than 46 men to a company.

Although it is true the constabulary can not now be maintained at the highest point of efficiency under the present appropriations, any increase does not seem likely. Should the constabulary be relieved from duty in the Moro Province and their places taken by scouts, ₱3,000,000 a year in this branch of the service would probably be ample. Year by year, from the time when active work on the part of the United States Army was necessary to maintain peace, the constabulary has proved itself the right arm of the insular government and has brought conditions more under their control, until this year for the first time the army, including the scouts, has not been called on for aid in a single instance. The constabulary has maintained peace and good order throughout the islands—a greater degree of peace and good order, it is safe to say, than has been known in these islands for more than twelve years. In the territory inhabited by non-Christians and the Moros there have been lawlessness and crime, but less lawlessness and less crime than ever before in the history of the islands. This work has been accomplished on decreasing appropriations, and improved means of communication by road and railroad should enable a smaller force in the future to maintain the same standard of peace that prevails to-day. It is greatly to be regretted that a splendid force like this can not be kept at the highest point of efficiency, but reference to the financial condition of the country—the 1909 insular appropriations for schools, ₱3,300,000; roads, ₱1,500,000; irrigation, ₱500,000; fixed charges, interest on bonded debt, sinking fund, etc., and contribution to expenses of the city of Manila, all of which amount to ₱2,975,834.57 for 1908—seems to indicate that an expenditure of a greater amount than that appropriated for the year 1909 would not be justified, at least not until the condition of the country improves.

If economies in the constabulary administration are to be made, they will have to be made along the line of reduction in the enlisted force, and that ought not to be done until the constabulary in the Moro Province are relieved and scouts substituted. The number of officers can not be reduced without serious loss of efficiency, and it is believed that the present salaries paid officers are not excessive. A glance at the appended table will show the difference between the salaries paid constabulary and scout officers, although the duties of a

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constabulary officer are, under ordinary circumstances, more arduous and responsible than those of a scout officer.

Officer.	Salary.	Officer.	Salary.
CONSTABULARY.		PHILIPPINE SCOUTS.	
Lieutenant-colonel	₱5,500	Major	₱6,600
Major	4,000	Captain	5,280
Captain (average)	3,400	First lieutenant	4,400
First lieutenant	2,800	Second lieutenant	3,740
Second lieutenant	2,400		
Third lieutenant	2,200		

The constabulary is primarily a police force; and if it were possible to count on the effective assistance of the municipal police, the number of enlisted men might with safety be reduced. It is also the central force which must be counted on in time of serious disorder and therefore can never be dispensed with, however efficient may be the municipal police, whose energies must of necessity be limited to the area of the municipality.

The theory that the scouts could take the place of the constabulary is not well founded. Service with the civil government by scouts is not regarded with favor and, indeed, anything like control of them by civil government officials would be resented.

In addition to abolishing the grade of subinspector the Legislature made provision for the following: Increase of the medical division, increase in pay of first lieutenants, increase in pay for long service, authorization of four district bands, and additional compensation for senior inspectors. All these measures should have a decided effect in increasing the efficiency of the organization. The paying of pensions to officers and men of the constabulary upon retirement, as is done in other countries, must await improved financial conditions and a fuller treasury.

Animal stealing still continues in spite of the efforts of the constabulary, who are greatly handicapped by the inefficiency of the municipal police.

The work of the constabulary among the Moros and non-Christian tribes has been excellent, the presence of even a small detachment under discreet and courageous officers having an immediate restraining influence on those in the vicinity of the station.

A summary of operations for the year follows:

	Number.	Percentage of increase over 1907.	Percentage of decrease from 1907.
Firearms captured	854	14.93	.....
Stolen animals recovered	848	98.13	.....
Patrols	14,369	116.53	.....
Miles covered in such patrols	282,425	15.62	.....
Convictions secured	548	.....	61.62
Desertions from force	18	.....	10.00

MUNICIPAL POLICE.

This force, which should cooperate with and supplement the work of the constabulary, is to-day practically valueless on account of the method of organization. The entire force of a town goes out of

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office with the presidente, and the appointment of the new policemen is the perquisite of the incoming official, so that they are rather servants of the presidente than law officers of the town. There is no uniformity of pay, instruction, discipline, size of force, or armament. The police of Samar are among the best in the islands, and 11 revolvers suffice for their armament. Iloilo, about half the size of Samar, with a better reputation for order, finds it necessary to have 21 rifles, 216 carbines, and 152 revolvers. Samar has 11 arms and 166 policemen; Iloilo has 389 arms and 370 policemen. A complete change in the law and the reorganization of the municipal police, which should be along the lines of giving permanency to the force and of placing it under competent inspection and supervision, would do much to remedy these evils and make of this almost useless force an effective adjunct to the constabulary.

Peace Conditions by Constabulary Districts.

FIRST DISTRICT.

The first district comprises Bataan, Batangas, Benguet, Bulacan, Cavite, La Laguna, Nueva Ecija, Pampanga, Pangasinan, Rizal, Tarlac, and Zambales. The capture this year of Severino Rodriguez (alias "Berong"), who was Felipe Salvador's chief lieutenant and commanded at the Malolos raid of 1906; the capture of Miaco, the constabulary deserter who led the jail delivery in Bataan in 1907; the destruction of de Guia's and of Baliton's bands of ladrones, and the reduction of de Castro's band to 3 members leave this district without any organized bands of active criminals. Felipe Salvador, the most dangerous outlaw in Luzon, is, however, still at large. His influence over the lower classes has defied the efforts of the government to capture him for the last five years. In June, 3 other desperate criminals under the lead of Fructuoso Vito escaped from Corregidor Island, but luckily he was killed in a fight with the constabulary at the end of August.

The armed ladrone is no longer a large factor in carabao stealing. The crime, however, is still prevalent, but less so than during last year.

SECOND DISTRICT.

The second district comprises Tayabas, Ambos Camarines, Mindoro, Albay, Sorsogon, and Samar. The dispersion of Valerio Avila's band, near the Ragay Gulf, the capture of Guinaha and Ugas in Albay, and the scattering of the following of Vargas and Deseo in Tayabas leave no organized bands of outlaws in this district outside of Samar. Esteban Deseo, in Tayabas, and Valerio Avila, in Ambos Camarines, are still at large, but without following. In Samar conditions have improved greatly in the last year. It is the first time in four years that no troops have operated in the province. A few engagements have taken place with scattered detachments of Otoy's band, resulting in the death of Simeon Angeles, the second pulahan chief left in Samar; the death of Banigoos, a brother-in-law of Otoy, and the capture by Governor Cinco of Ubaldo Diaz, Otoy's chief

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fighting man. Conditions in Samar are more promising for permanent peace than at any time since American occupation, while Sorsogon and Mindoro have been entirely quiet during the year. Systematic animal stealing does not prevail in this district, although there is occasionally a little in Tayabas and Masbate.

THIRD DISTRICT.

The third district comprises Antique, Bohol, Capiz, Cebu, Iloilo, Leyte, Negros Occidental, and Negros Oriental. There are no organized bands of outlaws in this district outside of Iloilo, where there are two bands of about 20 men each, with a total of 18 firearms between them. Alcachufas, with one revolver and a few followers, still hides in Cebu, and probably passes occasionally to Negros. The capture of Santiago, in October, rid Negros Occidental of the last leader of an organization of outlaws. There has been some carabao stealing in northern Leyte, but it has practically ceased, and the turbulence which distinguished Leyte for the last two years ended with the surrender of Idos, the last pulahan chief, in October. Much carabao stealing prevails in Iloilo. This province lost its governor by assassination in December last, probably on account of a political feud. The murder of two Americans, Mr. Everett, of the Forestry Bureau, and Mr. Wakeley, a teacher, and two Filipino assistants, by wild tribes in the mountains of Negros Oriental, occurred in May. It was not known, until information was received that the party was lost, that a trip was contemplated, or a suitable escort would have been provided.

FOURTH DISTRICT.

The fourth district comprises La Union, Ilocos Sur-Abra, Ilocos Norte, Cagayan, Isabela, and Lepanto-Bontoc. In Cagayan is the subprovince of Apayao. Lepanto-Bontoc includes the subprovinces of Bontoc, Kalinga, Lepanto, and Amburayan. There are no organized bands of outlaws in this district. Carabao stealing prevails to a slight extent among the Christian provinces. The chief menace to peace in this district is the raiding of Christian communities by the fierce head-hunters of the mountains. Heads to the number of 44 known to have been taken, with many that were probably not reported, make the principal stain of crime on the Philippine records for the year. This, however, is a great improvement over the past, when hundreds of heads were taken annually.

FIFTH DISTRICT.

The fifth district comprises the provinces of Misamis, Surigao, and Agusan, and within the Moro Province the districts of Cotabato, Davao, Lanao, Sulu, and Zamboanga. The recent capture of Salif Aguil, who was responsible for the uprising during the present year in the island of Basilan, where two American lumbermen, Messrs. Vermont and Case, were murdered on December 24, 1907, is believed to have put an end to organized outlawry in Zamboanga district. With the exception of a few outlaws under the leadership of Jikiri, in

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Jolo, which is garrisoned by the military and on which the constabulary do not operate, the only organized bands of outlaws in the fifth district are in Lanao. There are reported to be 5 bands, numbering in all from 265 to 400 men, armed with about 134 firearms of various kinds. One of these seriously wounded Governor Gard on February 19, 1908.

Surigao and Misamis have given no trouble during the year.

In the province of Agusan Mr. H. M. Ickis, of the bureau of science, and private Napal Pastor, First Surigao Company, were treacherously murdered in May last by a Manobo. The murderer is supposed to have committed the crime in the belief that he would thus avenge the death of his father, who died in jail during the Spanish régime. In Cotabato there have been a few cases of carabao stealing during the past few months. Davao has no organized bands of outlaws, but has small roving bands of pagans, who are continually fighting among themselves and who occasionally commit depredations against the coast natives.

In Lanao numerous encounters with outlaws took place during the year, in which both officers and men acquitted themselves with credit.

For further information and details, attention is invited to the report of the director of constabulary, hereto attached, marked "Exhibit A."

RAILROADS.

Very satisfactory progress has been made in the construction of railroads during the year. Of track 269.5 kilometers (167.4 miles) were laid and 286.4 kilometers (177.9 miles) of line opened for business, and at the close of the fiscal year there were 689.8 kilometers (428.4 miles) of line in operation in the islands, as compared with 196 kilometers (121.7 miles) at the close of Spanish sovereignty, or over three and one-half times as much. There was laid 37.5 per cent more track during the past year alone than was in existence in the islands when the Americans landed. Including sidings and second track there was a total of 841.9 kilometers (522.8 miles) at the close of the year.

The following table shows in kilometers[a] the distribution of the construction during the fiscal year:

	Grading completed.	Track laid.	Lines opened.
Manila Railroad Company	166.2	147.1	137.4
Manila Electric Railroad and Light Company			
Manila Suburban Railways Company	.7	.9	1.4
Tarlac Railway Company	2.0	2.0	20.6
Daet Tramway Company			
Philippine Railway Company	68.0	119.5	127.0
Total	236.9	269.5	286.4

The following table shows in kilometers the extent of line, not including sidings and second lines, the construction of which has been authorized by law, and the amount constructed:

[a] A kilometer is equivalent to 0.62137 mile.

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	Authorized.	Constructed; in operation.	Constructed; not in operation.	To be constructed.
Manila Railroad Company	1,100.0	473.3	33.1	593.6
Manila Electric Railroad and Light Company	45.0	39.8	.....	5.2
Manila Suburban Railways Company	19.9	9.9	.....	10.0
Tarlac Railway Company	20.6	20.6	.....	.....
Daet Tramway Company	7.2	7.2	.....	.....
Philippine Railway Company	461.0	127.0	13.4	320.6
Insular Coal Company	12.0	12.0	.....	.....
Total	1,665.7	689.8	46.5	929.4

NOTE.—The Lepanto Mining Company having failed to accept its franchise within the nine months set by Act No. 1700, no mention of this company is made in the above table.

LEGISLATION.

Act No. 1779 of the Philippine Commission created a board known as the "board of rate regulation," for the regulation of rates charged by public-service corporations. This board is composed of the governor-general, the secretary of commerce and police, and the supervising railway expert, and the powers given are in general similar to those conferred on the Interstate Commerce Commission by Congress.

Act No. 1735 of the Philippine Commission granted authority for the construction of a railroad to Baguio, and authorized the governor-general to execute a concessionary contract in a form similar to that granted to the Manila Railroad Company and the Philippine Railway Company. In addition, the governor-general was authorized, with the approval of the Secretary of War, to incorporate any or all of the following terms: (*a*) Guaranty of interest on construction bonds on the same terms as in Act No. 1497, granting a concession to the Philippine Railway Company; (*b*) guaranty of a minimum annual business of ₱100,000 for fifteen years; (*c*) the right to make use of water power from the Bued and Agno rivers or their tributaries; and (*d*) the right to use the Benguet road. The authority of the governor-general to execute the proposed concessionary contract expires October 2, 1910. Negotiations looking toward the construction of this line are being made and will no doubt be successful.

The Philippine Legislature granted a franchise to the Insular Coal Company for a railroad already constructed from the port of Danao, Cebu, to the coal district of Camansi, a distance of 12 kilometers, the line being used solely for the purpose of hauling coal, and not for public service.

MANILA RAILROAD COMPANY.

During the year work on the new system has been pushed with the same energy and activity noted in the previous annual report of this department.

Act No. 1510 requires the Manila Railroad Company to have 241.4 kilometers (150 miles) of authorized lines completed on September 12, 1909. At the close of the fiscal year the company had 183 kilometers (113.6 miles) of track laid, with fourteen and one-half months remaining to complete the balance of 57 kilometers (35.4 miles); of this track 150 kilometers (93.2 miles) are in operation, with the grad-

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ing and location of the remainder well in advance of any requirements. The line from Dagupan to Camp One was completed in time for the regular handling of traffic to Baguio from the beginning of last April, and the company has constructed a suspension bridge across the Bued River, to connect its terminal with the Benguet road. In March, 1908, the company's bridge across the Pasig was opened, and trains ran south of Manila for the first time.

The earnings of the company for the calendar year 1907 were:

Gross earnings	₱2,179,532.97
Operating expenses (including taxes)	1,001,721.75
Net earnings	1,177,811.22
Percentage of operating expenses to gross earnings, 45.9.	
Gross earnings per kilometer	6,476.46
Gross earnings per mile	10,413.44
Net earnings per kilometer	3,509.12
Net earnings per mile	5,627.38

The following table shows the total annual gross earnings of the company to date, and the annual gross earnings per kilometer of track:

Year.	Gross earnings.	Gross earnings per kilometer.	Year.	Gross earnings.	Gross earnings per kilometer.
1892	₱238,278.42	₱1,215.70	1900	₱740,135.20	₱3,700.67
1893	508,315.23	2,593.44	1901	1,321,375.98	6,606.87
1894	568,589.30	2,900.96	1902	1,238,235.05	6,191.17
1895	613,225.06	3,128.69	1903	1,587,854.93	7,708.03
1896	612,707.72	3,126.05	1904	1,475,969.99	6,559.86
1897	733,178.78	3,740.70	1905	1,694,820.01	6,871.50
1898	778,340.10	3,891.70	1906	2,088,075.05	6,368.98
1899	166,458.65	832.29	1907	2,179,532.97	6,467.46

On the Albay lines 13.7 kilometers have been graded and a short section of track laid.

Manila Electric Railroad and Light Company.

At the close of the year the company had approximately 39.8 kilometers (24.7 miles) of main line in operation and a total of 63.2 kilometers (39.2 miles), including second track and sidings.

The earnings and operating expenses of the company during the past year were:

Gross earnings	₱1,060,615.27
Operating expenses (including taxes)	569,398.78
Net earnings	491,216.49
Percentage of operating expenses to gross earnings, 53.7.	
Gross earnings per kilometer	26,648.62
Gross earnings per mile	42,939.89
Net earnings per kilometer	12,342.12
Net earnings per mile	19,887.31

Total number of passengers carried, 10,701,859.

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MANILA SUBURBAN RAILWAYS COMPANY.

This company was required to complete its lines from Paco to Pasig, Rizal, by January 30, 1908. Owing, however, to the collapse during erection of the bridge over the Pasig River on October 31, 1907, completion was delayed. On January 6, 1908, the line began to operate from Fort William McKinley to Pasig, the passengers being transferred by ferry, and by June 14, the bridge had been opened and the full schedule from Manila to Pasig put in operation. No work was done on the line to Taguig and Laguna de Bay. At the close of the fiscal year the company had 9.9 kilometers (6.1 miles) of track in operation, with 1.7 kilometers (1 mile) of sidings, making a total of 11.6 kilometers (7.2 miles).

The earnings and operating expenses of the company during the past year were:

Gross earnings	₱158,432.55
Operating expenses (including taxes)	71,954.30
Net earnings	86,478.00

Percentage of operating expenses to gross earnings, 45.5.

Gross earnings per kilometer	16,003.29
Gross earnings per mile	25,972.55
Net earnings per kilometer	8,735.15
Net earnings per mile	14,176.72

Total number of passengers carried, 2,087,786.

PHILIPPINE RAILWAY COMPANY.

The total amount of grading done by the Philippine Railway Company during the year was 68 kilometers (42.2 miles); the track laid during the same period was 119.5 kilometers (72.4 miles); and the company had in operation on June 30, 127 kilometers (78.9 miles) of line, 95 kilometers (59.4 miles) of which were on the island of Cebu and 32 kilometers (20 miles) on the island of Panay. The lines under operation, however, are only partially completed. The cost of operation is charged and the earnings therefrom are credited to the construction account, in accordance with Act No. 1497. The desirability of finally completing the line in Cebu, part of which has been in operation ten months, and closing up the construction account, has been urged upon the railroad company, and it is expected that this will be done in the near future.

CEBU.

In Cebu 95 kilometers (59.4 miles) of track were laid by May 15, and except a few sidings and yard tracks the work is entirely completed, unless the railroad company shall desire to construct the Carcar-Barilli-Dumanjug branch. The total issue of bonds made for this work was $2,411,000 United States currency to date; consequently the 95 kilometers have cost ₱50,760 per kilometer, or $40,600 United States currency, per mile.

The net earnings of the Manila Railroad Company in the calendar year 1907 per kilometer applied as a test to this line would give a net return of 6.9 per cent. The Philippine government guarantees 4 per cent on these bonds.

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PANAY.

At the close of the fiscal year 45.4 kilometers (28.2 miles) of track were laid and 32 kilometers (20 miles) were in operation, with 116 kilometers (72 miles) yet to be laid. The location for practically the whole line has been approved by the governor-general, leaving little more than a terminal at Bataan to be presented and approved. Bonds have been issued for 32 completed kilometers (20 miles) to the extent of $1,359,000 United States currency, a cost of ₱84,940 per kilometer, or $67,950 United States currency, per mile. This high cost is partly due to the extensive shops built at Lapus-Lapus, which are nearing completion.

The net earnings of the Manila Railroad Company per kilometer applied as a test would give a net return of 4.1 per cent on these bonds.

The comparatively high cost of the lines of this railway on the islands of Cebu and Panay is due largely to the permanent construction of all structures, thus securing a low cost of operation.

NEGROS.

The greater part of the line from Saravia to Cabancalan was approved by the governor-general March 26, 1908. Only a preliminary survey has been made for the line from Escalante to Saravia. The results of the survey, together with investigations into the probable traffic of the line, showed such discouraging figures that application was made by the Philippine Railway Company to the government in November, 1907, for the abandonment of this part of the line, and the matter is now under consideration. Active construction work had not begun in Negros at the end of the fiscal year, but it is expected to do so at the beginning of the next drv season.

TARLAC RAILWAY COMPANY.

The Tarlac Railway was completed and put in operation on December 1, 1907, the total number of kilometers in operation being 20.6 kilometers (12.8 miles). Under contract between this company and the Manila Railroad Company, the latter furnishes the rolling equipment and operates the Tarlac Railway, which maintains the line. The gross earnings are divided between the two companies. The earnings and operating expenses were:

Gross earnings	₱23,057.98
Total operating expenses (including taxes and 50 per cent of the gross earnings to the Manila Railroad Company)	15,747.07
Net earnings	6,971.11

Percentage of operating expenses to gross earnings, 68.29.

Gross earnings per kilometer	1,119.32
Gross earnings per mile	1,801.40
Net earnings per kilometer	338.40
Net earnings per mile	544.62

DAET TRAMWAY.

This line has 7.2 kilometers (4.5 miles) of track in operation. The earnings and operating expenses were:

Gross earnings	₱14,291.10
Operating expenses (including taxes)	12,708.47
Net earnings	1,582.66

Percentage of operating expenses to gross earnings, 88.9.

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Gross earnings per kilometer	₱1,984.87
Gross earnings per mile	3,175.80
Net earnings per kilometer	219.81
Net earnings per mile	351.70

For further information and details attention is invited to the report of the supervising railway expert, hereto attached, marked "Exhibit B."

BUREAU OF PUBLIC WORKS.

Cost.

The total expenditures for the bureau of public works were ₱944,150.12, as compared with ₱785,372.14 for the fiscal year 1907, an increase of 20 per cent.

The total receipts were ₱214,041.15, as compared with ₱137,909.77 for the fiscal year 1907, an increase of 55 per cent, making the net cost ₱730,108.97, as compared with ₱647,462.37 for the fiscal year 1907, an increase of 12 per cent.

The appropriation for 1908 was ₱627,300, as compared with ₱630,969.15 for the fiscal year 1907, a decrease of 0.5 per cent.

The appropriation for 1909 is ₱532,340, a decrease of 15.10 per cent from 1908.

Organization.

Owing to the very large appropriations which have been made for road and irrigation projects—much larger than in any former years—the bureau of public works is confronted with a serious situation in regard to securing the necessary technical force in sufficient time to carry out the work during this fiscal year. The present force is inadequate, but additional engineers and other employees have been authorized and are now being secured as rapidly as possible. Owing to this necessary increase in personnel, it is likely that the total expenditures of the bureau for the fiscal year 1909 will exceed those of any previous year. It is believed that this additional sum can be made up from receipts from operation.

The bureau of public works has completed its second full year under the new form given it by the reorganization act, No. 1407, whereby all the government constructing work, except port works, light-houses, and the engineering work of the city of Manila, including sewer and waterworks, was centralized in the bureau of public works. The writer believes that further concentration may be possible in the future.

The work of the bureau of public works falls under 4 main headings—roads, irrigation, public buildings, and artesian wells.

Road Policy.

The new road policy inaugurated during the fiscal year, although many preliminary steps had been taken previously, is dependent on the 3 following factors, all of which are mutually dependent, and each of which is indispensable to its success. They are:

(1) Increased annual appropriations by the insular government, available only to provinces which adopt the double cedula tax and establish proper road maintenance.

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(2) Increased annual appropriations by the provincial governments, mainly derived from the double cedula tax voluntarily adopted.

(3) Provision for an adequate system of maintenance.

INSULAR APPROPRIATIONS.

Previous to the fiscal year 1908 insular appropriations were always made for specific projects in various parts of the islands, and no conditions were attached whereby the provinces were obliged to raise funds on their own account or bound to maintain the road after its construction. The disastrous effects of this policy are only too evident in the present condition of most of these roads, many of which have become impassable for lack of maintenance. The provinces themselves did not have the necessary funds to carry on adequate road construction, and but little real road construction was done except from these appropriations.

For 1908 a new system was adopted and all appropriations for specific projects were conditioned on the adoption of the double cedula by the provinces—the extra money going into the road and bridge fund of the province—and the establishment of an adequate system of maintenance, also by the province. In addition, 10 per cent of the internal revenue was appropriated to be divided, on the basis of their population, among the provinces which adopt the double cedula, and ₱700,000 were appropriated to be distributed among the provinces in the discretion of the secretary of commerce and police. In all, for the fiscal year, there was appropriated for roads and bridges, ₱1,014,225 [a] for specific projects, ₱378,985.22 [b] from the internal revenue, and ₱700,000 to be distributed in the discretion of the secretary of commerce and police, a total of ₱2,093,210.22.

For the fiscal year 1909 a further departure has been made. No appropriations were made for specific projects, but in addition to the 10 per cent of the internal revenue, ₱1,500,000 was appropriated by Act No. 1837—

> For the construction, improvement, and, where necessary, maintenance of roads and bridges in those provinces which shall accept the provisions of Act No. 1652, or which shall be subject to the annual road and public-works tax imposed by Act No. 1396, and which shall by resolution of the provincial board guarantee by continuing annual appropriations the establishment of such a conservation system as may be necessary in the judgment of the director of public works on all first-class roads now or hereafter constructed and declared to be such by the director of public works, to be allotted in the discretion of the secretary of commerce and police.

If to this is added the sum of ₱150,000, estimated to represent the proportion of internal revenue for 1909, it will thus be seen that for the two years a total of ₱4,340,000 was appropriated, practically all conditioned on the adoption of the double cedula and provision for adequate road maintenance by the provinces.

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[a] This includes ₱168,000 which appears as an appropriation for the fiscal year 1907 in the auditor's report, because appropriated by act No. 1662, enacted June 27, 1907.

[b] In the auditor's report this item appears as accruing to the provincial road and bridge fund. For the purposes of this report it is treated like an insular appropriation.

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The following table shows the insular road appropriation for the seven years preceding (excluding the Benguet road appropriations and loans to the provinces for road work):

Fiscal year:	
1901	[a] $2,000,000
1902	
1903	₱9,000
1904	₱1,337,600
1905	₱190,350
1906	₱87,100
1907	[b] ₱5,000

Average annual insular appropriation, ₱518,435.
Average for 1908 and 1909, about ₱2,170,000.

The regrettable fact that a large part of the road work under these appropriations has come to naught for lack of maintenance has already been commented on, as has also the fact that no systematic road work was carried on by the provinces during this period, there being no method provided by law for raising adequate funds for this purpose.

The ₱1,500,000 for the fiscal year 1909, allottable in the discretion of the secretary of commerce and police, has been allotted as follows:

(1) Among the regular provinces, on the basis of their population, which adopt the double cedula and pass the road resolution and the supplementary road resolution hereinafter set forth, ₱1,000,000.

(2) For general expenses and special projects, which include, among others, ₱500,000:

(*a*) For the purchase of road machinery and equipment to be rented to the provinces, ₱105,000.

(*b*) For prizes to provinces doing the best road work, ₱30,000.

(*c*) For prizes to camineros for the best maintained section of road, ₱5,000.

(*d*) For general expenses of the road committee appointed by the secretary of commerce and police, including transportation, the preparation and translation of manuals and other printed matter, the purchase of maps and books, and the hiring of engineers, draftsmen, and stenographers, ₱35,000.

(*e*) For bridges on the Novaliches road, ₱43,200. These will open up two friar lands estates of the government, valued at ₱700,000.

(*f*) For a bridge on the Sibul Springs road, ₱38,000, and for maintenance of the road itself, ₱7,500.

The rule has been made to treat the provinces equally, and no preference has been shown on any other basis than that stated above. The allotment of money for the Novaliches and Sibul Springs roads is not an infringement of this rule, as both of these are regarded rather as insular than provincial projects. The largest sum set aside was ₱150,000 for the purchase of wide-tire carts. These carts are at present being sent to the provinces on a basis of distribution determined by giving 60 per cent value to the population and 40 per cent to the extent of first-class roads. They are to be earned by the work of a man and animal on the roads for the number of days necessary, at the prevailing rate of pay for services rendered, to cover the full cost of the cart to the government. In this way there will

[a] Mexican currency.
[b] Not including the ₱168,000 already mentioned.

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be distributed a large number of serviceable and durable carts of a type which will do far less damage to the roads than those at present generally in use, and it is hoped that after this distribution has taken place the law against narrow-tire carts and sledges will be rigidly enforced. It will then be within the power of the poorest man owning an animal to earn one of these carts by working for it, and consequently I can not see that there would be any hardship in the most rigid enforcement of the law, which aims to protect expensive roads against the great damage done to them by the narrow-tire, rigid axle carts, and thus to save the public money. As soon as this distribution is well underway there would seem to be no reason for any of the suspensions of the law which have been considered expedient in the past, nor for the lax administration of the law which has prevailed.

PROVINCIAL APPROPRIATIONS.

Realizing that the provinces did not have an adequate income for road work, on May 18, 1907, the Commission passed Act No. 1652, enabling the provincial boards in their discretion annually to double the cedula tax, the extra money going into the road and bridge fund of the province. Through this law the provinces for the first time have the means for raising considerable sums of money for roads. For the calendar year 1908 all the regular provinces adopted this law except Bulacan, Cavite, Nueva Ecija, and Tarlac; for the calendar year 1909 all but Antique have shown their courage and foresight by adopting it. The total amount received from the double cedula for roads and bridges during the fiscal year was ₱1,286,538, and it is estimated that about ₱1,600,000 will be received in the fiscal year 1909 from the same source. The total amount accruing to the provincial road and bridge funds for the year 1908, from all sources, was ₱2,016,803.73.[a]

The double cedula law had been preceded by another law whereby an endeavor was made to make provision for road work along different lines. This act was No. 1511, dated July 13, 1906, calling for five days' work on roads annually, or the payment of the commuted value thereof, from every man subject to the payment of the cedula tax. The adoption of this law was optional with the provinces, and none adopted it.

That a road policy based on compulsory labor was distasteful to the Filipino people was clearly shown by this failure; that their failure to adopt the law was wholly due to their inability to recognize the great need for good roads and the obligation imposed upon the local communities of sharing in the burden of creating them was as clearly disproved by the fact that all provincial boards, constituted in every case with a Filipino majority, with the exception of four, adopted the double cedula tax for the year 1908, and all but Antique have adopted it for the year 1909. It is true that the opportunity of sharing in the proportion of the internal revenue and the sums appropri-

[a] Figures furnished by the auditor. The total includes ₱389,323.61 unexpended balance from former years, but excludes ₱378,985.22 derived from the 10 per cent of the internal revenue.

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ated for roads by the Insular Legislature were powerful inducements to the provinces to adopt the double cedula tax, but the fact remains that the policy of local money taxation—which may be, shortly, known as the "money system"—to aid in the construction of roads, voluntarily assumed by the provinces, has met with complete success, and the policy of construction of roads by compulsory labor—which may be briefly known as the "labor system"—has as completely failed. Little difficulty has been encountered in convincing the provinces of the pressing need of road construction and the necessity of their sharing in the burden thereof, so long as this could be done in a manner acceptable to them, to wit, by the "money system," and so long as the insular government would contribute its share toward the burden of construction. The deep distrust of the "labor system" is attributable to many causes, among others the alleged great abuses which arose out of the system in the latter part of the Spanish régime; but to whatever cause due, it was effective, and the government has now embarked on a road policy which does not depend on it. The tendency in those States of the United States which are most progressive in the matter of road building has been to discard the labor in favor of the money system, and it is now the opinion of the writer that the Philippines are fortunate in starting their era of road building upon this system instead of the labor system.

Although this law failed of adoption by any of the provinces, it still stands. An amendment to the law provided that it might also be adopted by municipalities where the provinces failed to adopt it. There are now indications that several municipalities may do so. The problem of municipal roads is still as serious as that of insular and provincial ones a few years ago. The construction and maintenance of municipal streets, roads to barrios, and other local roads is intrusted to the municipalities, whose funds are not sufficient for this purpose. Until such time as their revenues are adequate for this work, good results may be obtained in many municipalities by the adoption of this law.

SUMMARY OF ROAD AND BRIDGE FUNDS.

Road and bridge income for the fiscal year 1908.

Insular appropriations:	
Specific projects (Acts Nos. 1662, 1668, and 1688)	₱1,014,225.00
Allottable by the secretary of commerce and police (Acts Nos. 1688 and 1783)	700,000.00
10 per cent of internal revenue	378,985.22
From current appropriation, bureau of public works	71,879.33
Unexpended balances from prior fiscal years	43,925.39
Total	2,209,014.94
Provincial funds:	
Double cedula	1,286,538.00
Unexpended balances from prior fiscal years	389,323.61
All other sources	340,942.16
Total	2,016,803.77
Grand total available for expenditure during 1908	4,225,818.71

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Expenditures during 1908.

Provincial expenditures	₱1,095,612.16
Insular expenditures	447,049.11
Total	1,542,661.27
Total available for expenditure during 1908	4,225,818.71
Total expenditures during 1908	1,542,661.27
Unexpended balance at the end of year	2,683,157.44

Estimate of road and bridge income and expenditures for the fiscal year 1909.

Unexpended balances from 1908	₱2,683,157.44
Allottable by the secretary of commerce and police (Act No. 1837)	1,500,000.00
10 per cent of internal revenue	750,000.00
Provincial road and bridge fund	2,000,000.00
Grand total available for expenditure during the fiscal year 1909	6,933,157.44

NOTE.—All figures from the auditor's office. For the purpose of this report the 10 per cent of the internal revenue is put with insular appropriations instead of with provincial funds, as in the auditor's report. It is to be noted that the internal revenue and double cedula are collected during the calendar year, and consequently were collected only from January 1, 1908, when the double cedula tax first went into effect. For this reason, the amount of the double cedula and 10 per cent of the internal revenue will be much greater in the fiscal year 1909, as that will include six months from each calendar year. For this reason the estimate for 1909 is a very conservative one.

The above figures are for the regular and special provinces as well as the Moro Province, but do not include the city of Manila or the municipalities.

ROAD MAINTENANCE.

Every province in the islands is now bound to put an adequate system of maintenance on all their first-class roads. This system is put into effect on each road immediately after construction, as well as on first-class roads already constructed; it is continuous from year to year; and its proper upkeep should be firmly insisted upon by the insular authorities. The Legislature made all road and bridge appropriations for 1908 and 1909 conditioned upon the establishment of such system. To carry out the declared purpose of the Legislature the secretary of commerce and police prepared a road resolution, of which the following is a summary:

(1) The province is bound to make a minimum continuous annual appropriation of ₱350 for each kilometer of first-class road.

(2) First-class roads are defined to be "all roads which possess substantial foundations and a durable and continuous surfacing and are certified by the director of public works, with the approval of the secretary of commerce and police, to be first-class roads."

(3) On each kilometer of such roads the province must deposit annually 50 cubic meters of broken stone for stone-surfaced roads or 40 cubic meters of gravel for gravel-surfaced roads, or such part thereof as the district engineer may certify to be necessary.

(4) Each province must have an average of one caminero, or road maintenance man, for each kilometer of first-class road during the rainy season and an average of one caminero for each 2 kilometers of first-class road during the dry season.

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(5) In the event of any deterioration taking place in the road the bureau of public works is empowered to take the deteriorated section over and maintain it at the expense of the province. In the event of the failure of the provincial treasurer to make the necessary payment for this, the payment of the amounts withheld is authorized to be made by the insular auditor upon accounts approved by the district engineer from any moneys due to the province from the insular treasury.

If the provinces are kept to the terms of this resolution by the insular government, it is believed that assurance can be given that hereafter all roads of the Philippine Islands can be kept in good condition, and that the fatal system, dwelt upon at length in the last annual report of the secretary of commerce and police, under which roads constructed at great expense fell into a state of complete ruin in from two to five years after their construction, has come to and end.

SUMMARY.

To sum up, it will be seen that increased road appropriations and increased road revenues have made possible a good roads movement, and that a new road policy has been inaugurated in which the most important departures from the previous system are (1) the proper maintenance of roads after construction, an absolutely vital matter in the Tropics, and (2) insular aid for roads only to provinces which impose the required additional taxation to raise funds for roads and put in a proper system of maintenance. It has been seen that this policy is dependent on adequate insular appropriations and on the annual adoption of the double cedula by the provinces, and that it was inaugurated after the experience of less than a year had shown the failure of a policy based on required labor. The failure of the law that gave the provinces the opportunity of electing to adopt this system was probably due to two main causes—(1) no insular appropriations were made available to the provinces in case of their accepting this law, i. e., no financial inducements were offered by the insular government, and (2) the deep distrust of the Filipino people of a compulsory labor law, probably owing to their experience with the same during the latter part of the Spanish régime. The present system of insular appropriations and the double cedula is in line with that now adopted in the States of the United States which are most progressive in the matter of road construction, namely, state aid for building roads conditioned on the local communities standing part of the cost (usually one-half). These States discarded the required labor system after long experience had shown its great defects.

Whether future legislatures will be as liberal with road and bridge appropriations and whether the provinces, now that for two years they have overcome the great initial opposition to the double cedula, will continue to adopt it remains to be seen. On the action of the insular and provincial legislatures in this respect will depend the success of the good-roads movement and in a large measure the future prosperity of the islands. The writer is strongly in favor of the Philippine government recommending that Congress authorize additional Philippine bond issues for public works, and under such bond issues it is hoped to raise the total annual road and bridge expenditures from about ₱4,000,000 to ₱6,000,000 or ₱7,000,000. Construc-

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tion for five years at the rate of ₱6,000,000 a year will relieve the present need of the more populous sections of the islands for good-road communication, ten years will give the islands a fairly adequate system of roads, and fifteen years will give them a system that will compare favorably with the best road systems of other countries.

The insular and provincial legislatures, as already seen, have taken the necessary financial steps to relieve the present wretched state of the roads, and with the continuation of such action the problem will become almost entirely an engineering one. During the past year provincial boards have generally taken a most active interest in the road and bridge work, and whenever a similar awakening takes place in the municipalities the problem will become the comparatively simple one of the actual construction of the roads and bridges.

Copies of an open letter on roads, prepared by the secretary of commerce and police, as well as the road resolution already mentioned, are appended to this report. It will be noticed that in this letter particular stress is laid on the fact that roads are public property, to which a definite money value can be assigned, and that public officials whose negligence permits them to deteriorate should be held to the same responsibility as other public officials charged with property responsibility whose negligence leads to loss of valuable public property. Such responsibility for roads has not been insisted heretofore, but it is believed that it is absolutely essential if a successful good-roads development is to take place.

CONDITION OF ROADS.

The deplorable condition of the roads, dwelt upon at length in the last annual report of the secretary of commerce and police, however, still continues in spite of the active construction work during the past year, and must necessarily continue for a year or two more, notwithstanding the most vigorous efforts that can be made to relieve the situation. No one thing, in the writer's opinion, retards more the prosperity of the islands.

CONSTRUCTION.

During the past year about 225 kilometers of roads were constructed or reconstructed under the supervision of the bureau of public works, declared first-class roads and put under a system of maintenance, and 4 steel bridges and 347 concrete bridges and culverts were completed. Acts Nos. 1662, 1668, 1688 made an insular appropriation of ₱1,003,725, including transfer of ₱9,500 from Act No. 1 funds, for specific road and bridge projects, including the following: The San Miguel Mayumo-Sibul Springs road, making the latter place accessible as a health resort; the Pagbilao-Antimonan road, opening up a wagon-road connection through Tayabas to the east coast of Luzon; the Bay-Tiaong road, opening up a rich copra country by a road over which there has been a maximum travel of 2,800 carts and 600 pack ponies in one day; the Cebu-Toledo and Carcar-Barili roads, establishing communication across the long, narrow, and very populous island of Cebu; the Loboc-Bilar road, furnishing an outlet for a very populous district; the completion of the Capas-O'Donnell-Iba road, which was abandoned owing to the failure of the province of Tarlac

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to accept the conditions imposed by the act to make the appropriation available for the project; the construction of permanent bridges on the Calamba-Bay road; the completion of the Tabaco-Ligao road, furnishing good means of communication for an immense hemp area; the construction of the Pasay-Zapote bridge road, giving good road connection from the city of Manila as far as the province of Cavite; and the betterment of the Benguet road. Of this money ₱280,342.31 had been spent at the expiration of the fiscal year 1908, leaving a balance of ₱722,382.69. Active construction work is now under way on all of the above projects, with the exception of the Loboc-Bilar road, on which surveys are now in progress. The ₱500,000 appropriated by Act No. 1688 for allotment by the secretary of commerce and police was allotted to provinces for road and bridge projects selected by the provincial boards with the approval of the director of public works. Of this sum, augumented by ₱98,200 from the appropriation for the Capas-O'Donnell-Iba road, ₱45,230.19 had been spent on June 30, 1908, leaving a balance of ₱552,969.81.

A more permanent type of construction has been insisted upon, and it is expected to adopt standard designs and sections that will provide for roads through the most populous districts, approximating the type of excellence of the modern state roads in the United States and the roads now being constructed under the direction of the United States in Porto Rico and Cuba. A general road engineer has been appointed with 4 assistants, each of whom will have charge of one of the four grand road divisions into which the islands have been divided, and this force, by constant inspection and supervision, will endeavor to bring about greater harmony of road and bridge design and better coordination among the various engineers working in their separate districts than has been possible heretofore.

PROGRESS OF MAINTENANCE.

Following the trend of the Legislature, great stress has been laid upon the heretofore neglected subject of road and bridge maintenance, and on June 30, 1908, 419 kilometers (260 miles) of first-class road were under the system of maintenance called for by the road resolution already spoken of, and there remained 14 provinces in which the first-class roads had not yet been determined. Camineros have been installed, baskets of material containing 10 cubic meters each have been placed along these roads, at the rate of 5 to a kilometer, and a constant system of inspection and supervision to watch for the first sign of deterioration in the roads has been established. It will take some time to train the men and to get the system running smoothly, but with a continuation of the present active cooperation of the provinces there should be no great difficulty in bringing this about.

THE BENGUET ROAD.

During the fiscal year 1908 ₱110,470.98 was expended for the maintenance and improvement of this road. The gradual improvement of the road by the substitution of masonry for dry walls and concrete culverts for wooden, the reduction of grades, and the steady improvement of the surfacing of the road has been carried on as extensively as possible with this money. Traffic over the road was very heavy

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and considerably exceeded that of any preceding year. No serious interruptions to traffic from slides or washouts occurred during the year and the road was not closed for more than a few hours at a time. Considering the extremely unstable nature of the mountain country in which this road is located, this can be considered a very fortunate record.

During the year it became apparent that the temporary wooden suspension bridges which cross and recross the Bued River canyon in nine places had deteriorated to the point where they could not be considered safe for more than one year more. The government then had to face the problem of either replacing these bridges or closing the Benguet road, a procedure which would have rendered valueless millions of pesos of public and private money invested in roads, buildings, valuable mines, and the railroad to Camp One. Consequently the sum of ₱200,000 from Act No. 1783 and ₱58,000 from general road funds, a total of ₱258,000, was set aside for this purpose. With this sum it is expected to replace 8 suspension bridges by 3 concrete and 5 steel ones. This will leave only 1 suspension bridge, not including the new suspension bridge erected by the railroad at Camp One, on the road, which, with a wooden Howe truss bridge, it is expected to eliminate by the construction of a piece of road on the opposite side of the canyon. Work on these bridges is now under way, either by administration or by contract, and it is hoped to complete them during this fiscal year.

BAGUIO.

During the year a large sanitarium, a suitable residence for the governor-general, a group of school buildings, a constabulary headquarters, where the constabulary school is now located, and a public market, besides a number of private buildings, were constructed.

The development of roads about Baguio continues steadily, there now being 24 kilometers of wagon road in the town site. Unfortunately the Benguet road was never finished to the center of the town site, and although there is now a fine macadam road from Camp One, the railroad terminus, to the top of the mountains, it is succeeded by a clay road, about 3 kilometers long, to the town, which is practically impassable in the rainy season. It is probable that the added cost of transportation to the government caused by this condition exceeds the cost of metaling this stretch of the road. The writer believes it essential that a continuous macadam road should extend from the railroad terminus to the hotels and business section of Baguio, as well as to the military reservation, and that suitable provision should be made for a light surfacing of gravel over the more important of the other roads, which being clay become almost impassable with the invariable afternoon showers of April and May—the time when Baguio is most sought by those desiring to escape from the oppressive heat of the lowlands. The Philippine government now has an investment of nearly ₱5,000,000 in Baguio, including buildings, land, roads, and the Benguet road, and it is strongly believed that the additional funds necessary to make Baguio really available to the government and to the public should be appropriated by the Commission. At a cost of about ₱60,000 the road system in Baguio could be put in suitable condition and a much needed waterworks system installed.

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This cost probably would be very soon saved by the decrease in transportation charges, by the income from water rates, and by the increased development that would take place in Baguio. With good roads and a waterworks system, the construction of houses and cottages by the public should proceed with increased activity and Baguio should take a great stride forward.

IRRIGATION.

By Act No. 1688, in addition to the special sum of ₱11,775 for the restoration of the irrigation system of Nueva Vizcaya, a reimbursable appropriation of ₱250,000 was made for irrigation, to be allotted among the provinces in the discretion of the secretary of commerce and police. Owing, however, to lack of reliable data, lack of engineers, and the necessity for a considerable period of study before this money could be expended to the best advantage, no active construction work was done during the year 1908. The serious shortage in the rice crop, caused by the dry weather of 1908, having brought home forcibly to the people the need of irrigation, a reimbursable appropriation of ₱500,000 was made by the Legislature for the year 1909, and, in addition, Act No. 1854 was passed, making annual reimbursable appropriations of ₱750,000, beginning with the year 1910. These sums are all in addition to the appropriations for irrigation systems on the friar lands estates, for which the sum of ₱45,500 was appropriated in 1908 and ₱60,000 for 1909. Act No. 1854 contains the following features:

(1) It creates the office of a general superintendent of irrigation, who shall have supervision and direction of the general investigations and construction of irrigation systems throughout the Philippine Islands. He shall prepare plans adequate for the establishment of an economical and complete system of irrigation throughout the Philippine Islands, for the approval of the secretary of commerce and police, and when such plans are approved he shall take the necessary steps to execute them.

(2) It states the procedure to be followed on receipt of a request from any provincial board, municipal council, barrio, or any group of inhabitants, together with a promise to pay an equitable rate for the use of water sufficient to reimburse the government within a period not exceeding twenty years.

(3) It provides that upon certification that the irrigation system has been constructed and is in working order, the director of lands shall take charge of the system and administer it for the benefit of the landowners under authorized regulations.

(4) It provides that the unpaid amounts shall be a lien on the property and shall be collected in the same manner as the law provides for the collection of government taxes.

(5) It provides that, whenever the government has been reimbursed for the total cost of any irrigation system, charges for water throughout the system shall be rendered to an amount sufficient to meet maintenance expenses.

These acts, with their continuous reimbursable appropriations, rendered it possible to embark on a definite irrigation policy with the assurance of a steady continuation of construction work year after year. In June, 1908, the secretary of commerce and police

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appointed an irrigation committee, consisting of 9 members, of whom 3 are members of the Assembly and 1 a Manila merchant. The committee is instructed to submit recommendations to the secretary of commerce and police on the following points:

(1) The allotment of money for irrigation projects.

(2) Terms upon which such allotments should be made.

(3) Matters of administration and the relation between the bureau of public works and the bureau of lands.

(4) The following general conditions are to be observed:

(*a*) The allotment of money is to be made where the greatest economic advantages can be realized. It should be allotted in regions where the greater part of the land to be cultivated is used for raising rice.

(*b*) The lands should be conveniently situated to public highways and roads, so that the products can reach the market.

(*c*) Other things being equal, preference should be given to those provinces which double their cedula tax for the ensuing year.

(*d*) Perhaps the best criterion as to relative merits of the different propositions that fall within the limitations above set forth is the number of pesos that the project will cost to bring water to each hectare of land, the preference, of course, being given to that project which will irrigate the largest number of hectares for a given amount of expenditure.

(*e*) The water is to be sold to the landowners at a price that will give ample money for all possible maintenance charges, leaving a balance to go to the capital fund. This, under the law, is reimbursable and can be used for extensions of the irrigation system. It is believed that the capital cost should not be paid back faster than at the rate of 10 per cent a year, or, say, the total cost in ten years. The plan of taking a percentage of the crop is strongly recommended. According to reports, 20 per cent is customary in Louisiana and California. If this will repay the capital cost too rapidly, 15 per cent would be satisfactory.

(*f*) The title to these projects should be vested in the government. Where the land is deeded or, better still, existing irrigation works, such as ditches, etc., are deeded to the government, consideration should be given in the percentage of the crop taken from the owner of the property, particularly if he had an irrigation plant of his own before.

(*g*) The bureau of public works will construct the irrigation plants, and the bureau of lands will administer the sale of water, collecting the rent and having general charge of the maintenance, etc., exactly as is done in the case of the friar lands estates.

Upon the recommendation of this committee, the secretary of commerce and police allotted ₱50,000 for general expenses of investigation, and the acting secretary of commerce and police has authorized 30 irrigation engineers, all of whom have been requisitioned from the United States, and has approved the investigation of projects in the following provinces: Bataan, Batangas, Bulacan, Ilocos Norte, Ilocus Sur, Iloilo, Antique, La Union, Lepanto-Bontoc, Leyte, Nueva Vizcaya, Occidental Negros, Pampanga, Pangasinan, Tarlac, Zambales. Some of these projects are already under investigation and new field parties are being organized as fast as the engineers arrive. It is hoped that at the end of this rainy season enough data will have

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been secured to enable the committee to recommend an allotment of money for the actual construction of one or more systems. The calendar year 1909 should see some progress made in the extension of irrigation systems throughout the rice lands of the islands. With proper irrigation, one crop will be assured and two will be possible, in place of one dependent on the weather, and consequently uncertain. Only a small beginning, however, can be made on a general extensive irrigation scheme for the islands with the annual appropriations now provided. Within a very short period, the writer is of the opinion, it will be necessary to have authority to issue bonds for irrigation, in order that larger and more general projects can be undertaken. In addition to making available larger sums of money, an issue of bonds will cause the cost of irrigation projects to be paid by those who are benefited now and in the future, rather than by the present general tax-paying public, on whom the burden of the annual appropriations falls.

Public Buildings.

This subject is treated more fully under the heading of the consulting architect. The architectural design of government buildings is prepared by the consulting architect, and the construction of the same is done either by the bureau of public works directly or by contract under its supervision. The maintenance and repair of all government buildings is also under the bureau since the passage of the reorganization act, No. 1407, in October, 1905.

Artesian Wells.

From 1904 to the end of the fiscal year, covered by this report, 28 wells were sunk by the bureau of public works at an average cost of ₱2,607.28 per well, or ₱29.14 per meter. Act No. 1688, enacted August 17, 1907, created a reimbursable fund for artesian wells, appropriating ₱37,000 for that purpose, and under this authority the cost of successful wells was charged against the insular bureaus, provincial or municipal governments, as the case might be. It soon became apparent, however, that it would be difficult to recover the expenses from municipal governments, as the municipal revenues are hardly adequate even for such necessary public improvements as this, and, in fact, only two municipalities, Bulacan and Malolos, have paid the bills rendered them.

In view of this fact and of the great advantage of these wells from the point of view of the public health (in some cases this installation has reduced the death rate 50 per cent), the expense of installing them is now deemed a proper subject for insular expense. Accordingly, Act No. 1837 changed the system by appropriating ₱150,000, to be allotted in the discretion of the secretary of commerce and police for artesian wells, with the provision that the money could be used for pending bills for wells already driven, and no provision for reimbursement was made. Under this policy, work with the deep-well rigs and exploration works will be done largely at insular expense, and it is the intention to cancel all, or nearly all, of the pending bills for wells already driven. To do this, including refunding Malolos and Bulacan, will take ₱46,703.37, or nearly one-third of the entire appropriation.

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Itineraries have been prepared, after the recommendation of the director of health had been secured, covering those sections of the islands which are most in need of wells from a sanitary point of view, and active well boring is now in progress on most of these itineraries. This appropriation is not large enough to permit of artesian well work this year in more than a few of the provinces, and it is the intention to concentrate the work in sections of the country which have the greatest sanitary need of wells and to move the rigs from adjoining town to adjoining town in such sections in order to reduce the transportation expenses to a minimum so as to secure the largest possible number of wells under this appropriation. Were the work more spread out and the well-boring outfits moved over large sections of country in order to try to reach a greater number of provinces this year, the expenses of transportation would be so greatly increased that the number of wells possible would be very much decreased.

METHODS OF WELL DRILLING.

Two general methods of well boring are in use—

(1) Deep-well outfits, using steam power and capable of boring wells through any material to a depth of from 1,000 to 3,000 feet, according to the capacity of the machine. The bureau of public works now has 4 of these outfits.

(2) Jet rigs, operated by man power, and capable of drilling for water through fairly soft material to a depth of 300 feet. The bureau has 2 of these rigs in operation, is building 4 more, and others are to follow. Wherever the country permits their use, wells can be rapidly and cheaply sunk by their aid.

Exploration work is now in progress in various provinces to discover whether the general geological nature of the country therein in such as to call for a deep-well rig or a jet-well rig.

Operations by the bureau to date indicate that the cost of jet-rig work per meter of well is about one-third of the cost of deep-well rig work, and the general policy is to furnish provinces with a jet rig complete and a capable well man to act as instructor to a Filipino capataz, until the latter is competent to operate the machine on his own responsibility, subject to inspection by traveling inspectors. It is expected that the provinces will secure voluntary labor for transporting these light machines from one place to another and for operating them. The province will also have to pay the greater part of the other expenses of operation. Under a continuation of this system it is believed that in those sections of the islands where jet rigs can be operated artesian wells can be rapidly and cheaply furnished to all the municipalities and to most of the barrios.

For further information and detail, attention is invited to the report of the director of public works hereto attached, marked "Exhibit C."

CONSULTING ARCHITECT.

The work of the consulting architect falls under three heads:

(1) Preparation of designs and plans for government buildings.

(2) Supervision of the development of Manila in accordance with the Burnham plan, which includes not only architectural features,

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strictly speaking, but also the development of a park system, boulevards, etc.

(3) The development of town sites—especially that of Baguio—in general conformity to the Burnham plan.

Cost.

The cost of this office for the fiscal year was ₱47,634.28, all except the salary of the consulting architect being charged to bureau of public works appropriations. Plans have been prepared or are under consideration for ₱4,597,390 worth of buildings, at an average cost of 1.6 per cent for complete plans and specifications ready for contract, not including inspection of construction. The usual architectural charge for such work varies from 2.5 per cent to 5 per cent, excluding traveling expenses, so the government secures this service at a reasonable figure, especially when the value of the services in the development of Manila and town sites, including Baguio, which are not included in the above figures, are taken into account.

Public Buildings.

During the fiscal year completed plans were prepared for 43 projects, the aggregate cost of which was ₱2,014,584; plans were in course of preparation for 44 projects, of an aggregate cost of ₱1,384,693; and preliminary plans were started for 4 projects to cost ₱600,000. In addition, 16 projects, of a total cost of ₱598,113, were under construction from plans prepared during 1907. Some of the more important of these buildings now under construction, or for which plans are being prepared, are the General Hospital, Manila, to cost ₱780,000; the Civil Hospital, Baguio, ₱61,000; the Tondo School, Manila, ₱100,000; the Medical School, Manila, ₱250,000; the government warehouses on the reclaimed area, Manila, ₱350,000; and many important provincial buildings (capitols) at San Fernando, Pampanga; Pasig, Rizal; Santa Cruz, Laguna, and other places, the cost of which runs between ₱60,000 and ₱100,000.

Permanent Construction.

The policy of permanent construction inaugurated a few years ago has been followed as closely as possible. The great majority of buildings are being constructed with walls of reenforced concrete, and whenever possible with floors and partitions of the same. Wherever woodwork has been used, durable hard native woods are generally insisted on. The most temporary and least satisfactory element of construction in most of the present buildings continues to be the galvanized-iron roofs. These roofs not only detract greatly from the appearance of the buildings, but are very disadvantageous from the point of view of permanency, as their life is short and repairs are constantly necessary. They also greatly increase the heat of the interior. The old Spanish tile roofs, from the point of view of beauty and finish they add to a building, as well as from the point of view of permanency, left little to be desired; but they must necessarily be abandoned as too expensive and, owing to their great weight, danger-

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ous in case of earthquakes. Satisfactory light tiles, wired to the roof instead of cemented, are now used in Europe, and it is hoped that their successful manufacture will soon be under way here. With the successful manufacture of such tiles every element of construction of the new buildings constructed under the American administration in the islands will be of a durable nature, and the American occupation should leave behind it public buildings comparing favorably with the monumental character of those erected by the Spaniards.

Development of Manila.

Progress is being made for a general system of streets and boulevards according to the principles indicated in the Burnham plan with special reference to the location of the proposed group of capitol buildings on Wallace field and of the proposed railroad terminal in Paco.

LUNETA EXTENSION.

The building of the Luneta extension is proceeding satisfactorily, soil being taken for the purpose from the glacis of the walled city, the one operation thus helping toward the completion of the Luneta extension and the treatment of the glacis about the wall as a park feature with sunken ground panels.

FILLED AREA.

The street system for the reclaimed area, which contains approximately 210 acres (849,840 square meters), has been laid out by the bureau of lands, in accordance with plans prepared by the consulting architect's office, and approved by the municipal board. The system provides for a railroad to each pier and makes practically all the blocks accessible to a line of railroad.

PARK SYSTEM.

An area of 100,000 square meters in Malate, adjoining the lands now used for the army corral, along the beach, was purchased for a park.

CAVITE BOULEVARD.

There has been appropriated for the construction of the Cavite boulevard ₱350,000, of which ₱100,000 is now available, and it is hoped to let the contract for beginning the retaining wall in October. Thereafter the remainder will be available at the rate of ₱50,000 a year.

Baguio.

During the year a sanitarium, a suitable residence for the governor-general, a group of school buildings, a constabulary headquarters, and a public market were constructed, and the town site was further developed in accordance with the general plan prepared by the consulting architect's office.

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SIBUL SPRINGS.

A plan for the general development of Sibul Springs was prepared. Sibul Springs is a very popular health resort among the Filipinos, largely because of its baths; and important development here is expected to take place since the construction during the last year of a good road, making it more readily accessible.

For further information and details attention is invited to the report of the consulting architect, hereto attached, marked "Exhibit G."

BUREAU OF POSTS.

The entire Philippine government business of transmitting communications by means of post, telegraph, and telephone is now under the bureau of posts, as is also the postal savings bank.

COST.

The total expenditures of the bureau of posts were ₱1,265,816.81, as compared with ₱1,132,002.35 for the fiscal year 1907, an increase of 12 per cent.

The total receipts were ₱756,146.08, as compared with ₱671,586.81 for the fiscal year 1907, an increase of 12 per cent, making the net cost ₱509,670.73, as compared with ₱460,415.54 for the fiscal year 1907, an increase of over 10 per cent.

The appropriation was ₱688,000, as compared with ₱462,800 for the fiscal year 1907, an increase of nearly 49 per cent.

The appropriation for 1909 is ₱688,000, the same as for the fiscal year 1908.

These figures are considered gratifying in view of the expense of taking over the additional telegraph and cable lines formerly operated by the United States Signal Corps, the expense of the postal savings bank (such part as is not paid out of its receipts), and the greatly increased cost of mail transportation, due to the provisions of the Universal Postal Convention signed at Rome May 26, 1906, which became effective January 1, 1908.

The efficient businesslike management of the bureau, commented upon in the last annual report of the secretary of commerce and police, has continued.

NUMBER OF POST-OFFICES.

At the beginning of the fiscal year 505 post-offices were in operation, and at the end thereof 540, an increase of 35, or nearly 7 per cent.

PERSONNEL.

The number of employees has increased from 1,343 at the beginning of the fiscal year to 1,624 at the end of the same. This increase of 281 employees—over 20 per cent—is due principally to taking over the telegraph and cable lines of the Signal Corps. During the year the percentage of Filipinos employed increased 2 per cent, leaving a ratio of personnel on June 30, 1908, of 15 per cent American to 85 per cent Filipino. These figures include mail carriers and contractors.

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Free Delivery.

The free-delivery municipal letter-carrier service was established in 31 municipalities. It is regretted that the Philippine Legislature failed to appropriate the amount necessary to extend this service. It is also regretted that lack of funds prevented the establishment of a post-office in each municipality of the regularly organized provinces, as was contemplated.

Registered Mail.

The total number of pieces of mail registered at Philippine post-offices was 331,102, as compared with 280,044 in the fiscal year 1907. This large increase of 18 per cent is a very encouraging sign to the commercial interests of the islands. It is believed that the regular schedules maintaining over 21 interisland steamship routes are responsible in a large measure for this patronage.

Mail Contracts.

The interisland contract steamers now cover 13 routes, which are supplemented by 8 bureau of navigation routes, enabling the mail service to cover, at regular and frequent intervals, practically every port of importance in the islands.

Railroad construction by the Manila Railroad Company has been progressing favorably under the concession granted by Act No. 1510, which terminated the old Spanish concession providing for free mail service up to April 24, 1907, when the new concession took effect. The rate of pay for carrying mail for the year was fixed at ₱53 per kilometer, and the cost of this service amounted to ₱11,221 more than the last fiscal year.

Payments to commercial vessels for carrying our mails to foreign ports amounted to ₱13,268.74, and to foreign countries for territorial and sea transportation ₱62,232.14, increasing the cost over the year 1907 by ₱35,265, or over 111 per cent. This increase was caused by the provisions of the Universal Postal Convention, signed at Rome May 26, 1906, which became effective January 1, 1908, and remains in force until December 31, 1913. Previously the yearly settlements for this service had been made on statistics based on the weighing of the mail in 1899, when the United States Army transports carried the greater part of it. Under the new weighing of mails called for by the provisions of this convention, the great increase in expense will continue unless a lower rate can be obtained from the different steamship lines now plying between Hongkong, Japan, and the Pacific coast on a regular schedule.

Automobile Service from Camp One to Baguio, Benguet.

Two Stanley automobiles were in operation from April 12 to May 27, 1908, furnishing mail and passenger transportation betwen Camp One and Baguio. The cost of the machines and all operating expenses amounted to ₱15,018.64, including many extraordinary charges necessary to put the machines in operation in time to be of service during part of the Baguio season—such as ₱2,200 for expressing them across

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the United States. The revenues obtained from fares amounted to ₱6,084. In addition to this revenue the service saved ₱675 in mail transportation. It was demonstrated that the service could be made a paying investment, besides bringing Baguio within easy reach of Manila. Five Stanley mountain wagons, capable of carrying 7 passengers each, have been ordered, and will be put on this run in December, and thereafter automobile service throughout the year will be rendered.

Money Orders.

The number of money-order offices increased from 63 at the beginning of the fiscal year to 68 at the close. The number of orders issued increased from 98,813 in 1907 to 107,751 in 1908. The amount of the orders issued increased from $3,229,446.09 to $3,645,123.13. The average amount of each order issued rose from $32.69 in 1907 to $33.83 in 1908.

The increase in the number of orders issued amounts to over 9 per cent, while the increase in the total money value is about 13 per cent. This is significant owing to the fact that during the fiscal year 1907 a decrease of 12 per cent was noted in the value of the orders issued, as compared with 1906.

Telegraph Division.

The number of kilometers of insular telegraph lines on June 30, 1908, was 4,898; of telephone lines, 3,468.8, and of cables, 2,176.

In accordance with the resolution of the Philippine Commission, adopted March 20 and effective October 4, 1907, 31 telegraph offices and 3,389.32 kilometers of telegraph and cable lines were transferred during the year to the bureau of posts by the United States Signal Corps, thus completing the transaction begun over a year ago. The details of this agreement were set forth in the last annual report of the secretary of commerce and police. The total length of the insular telephone, telegraph, and cable lines at the close of the fiscal year was 10,542 kilometers (6,546.58 miles), as compared with 7,153 kilometers (4,442 miles) at the close of 1907, an increase of 47.4 per cent.

It is anticipated that the cables laid throughout the islands by the military authorities and transferred to this bureau will cause considerable trouble, as the type was intended for temporary use only, and most of the cable has already deteriorated. In January the cable between Malabang and Zamboanga became interrupted. It was found that 40 miles of deep-sea cable would be necessary, so the repairs had to be abandoned. In order to restore telegraphic communication between Malabang and Zamboanga parts for a 3-kilowatt wireless station are to be manufactured and installed by the United States Signal Corps at Malabang. The bureau of posts will reimburse the military for all expenses incurred and will thus be able to comunicate with Zamboanga, where the Signal Corps already have a wireless station.

TELEPHONES.

The question of provincial telephones has been a serious one on account of the difficulty of exercising proper supervision from Manila. A new system has been in effect since July 1, 1908, by which all ex-

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penses of provincial telephone services are borne by the provinces instead of by the bureau of posts. When a provincial board applies for telephone service it must adopt a resolution authorizing the necessary expenditure and agreeing to reimburse the bureau of posts for all expenses of construction and maintenance. The bureau of posts then carries out the work at the expense of the province. The provincial board in turn is authorized by the governor-general to charge subscribers a monthly toll for the use of each instrument. With this revenue sufficient funds will be available to keep each system in good condition.

Postal Savings Bank.

The Postal Savings Bank was opened in Manila on October 1, 1906. The law provides for offices of three classes with limitations as to the amount that can be received at any one time in the second and third classes. At the close of the fiscal year 1907 there were 9 first-class, 81 second-class and 143 third-class banks in operation. At the end of the fiscal year 1908 there were 12 first-class, 106 second-class, and 127 third-class banks in operation, an increase of 12 banks of all classes, or 5.15 per cent.

At the close of the fiscal year 5,389 accounts stood open as compared with 2,331 at the beginning thereof, an increase of 131.18 per cent. The amount of deposits in the bank on June 30, 1908, was ₱1,031,994.04, as compared with ₱509,463.34 on June 30, 1907, an increase of ₱522,530.70, or 102.56 per cent. Making a pro rata allowance for the 3 months of 1907 before the bank was in operation, the increase is 66.2 per cent.

At the close of the fiscal years 1907 and 1908 the nationalities of the depositors were as follows: American—In 1907, 1,616 or 60.4 per cent; in 1908, 3,725 or 50.71 per cent. Filipino—In 1907, 944 or 35 per cent; in 1908, 3,294 or 44.84 per cent. Others, scattered among Europeans, Asiatics and societies. It will be observed that over 44 per cent of the depositors are Filipinos, an increase of almost 10 per cent during the past year. This is very encouraging, as it shows that the institution is gaining in the confidence of the Filipino people for whose benefit it was primarily established.

POSTAL SAVINGS BANK STAMPS.

It has been found that the use of postal savings bank stamps is not popular on account of the difficulty of caring for them in this climate. Under the law, banks of the third class may receive deposits only by means of these stamps. It is believed that this restriction has resulted in many of the third-class banks doing no business during the year. Again, postmasters in the provinces should be permitted to pay withdrawals of small amounts to depositors without first obtaining authority from the central office. As it is now, in isolated districts great difficulty is experienced by depositors in obtaining small sums for immediate use, sometimes a full month elapsing between the application for withdrawal and the payment. Every restriction on the free use of these banks that can be done away with with safety should be removed. The increased use of these banks by the mass of the people will follow greater freedom to withdraw deposits. It is

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believed that this recommendation is very important and should be submitted to the Legislature at its next session. It is also believed that the legislation in regard to the bank should be more general in its nature, allowing details to be determined by rules and regulations made administratively.

INVESTMENT OF POSTAL SAVINGS FUNDS.

The investment of the postal savings bank funds are by law placed in the hands of a postal savings bank investment board, composed of the secretary of commerce and police, the secretary of finance and justice, the director of posts, the insular treasurer, and a business man appointed by the governor-general.

The following table shows the condition of the bank on June 30, 1908:

Resources.		Liabilities.	
Loans on real estate	₱86,625.00	Deposits and interest	₱1,031,994.04
Railway bonds	249,515.56	Stamps outstanding	1,844.50
Deposits in banks drawing interest at 3½ per cent	620,000.00	Unapportioned interest	26,327.26
Cash deposited with insular treasury	39,000.00		
Cash in hands of postmaster	47,458.39		
Accrued interest outstanding	17,066.86		
	1,059,665.80		1,059,665.80

For further information and details, attention is invited to the report of the director of posts, hereto attached, marked "Exhibit H," and that of the chief, Postal Savings Bank division, marked "Exhibit I."

BUREAU OF NAVIGATION.

Cost.

The total expenditures of the bureau of navigation were ₱1,656,308.69, as compared with ₱1,302,203.19 for the fiscal year 1907, an increase of 27 per cent.

The total receipts were ₱420,002.84, as compared with ₱495,164.37 for the fiscal year 1907, a decrease of 15 per cent, making the net cost ₱1,236,305.85, as compared with ₱807,038.82 for the fiscal year 1907, an increase of 53 per cent.

The appropriation for 1908 was ₱1,288,000, as compared with ₱988,600 for the fiscal year 1907, an increase of 30 per cent.

The appropriation for 1909 is ₱1,235,000, a decrease over 1908 of 4 per cent.

In connection with the increase of 27 per cent in expenditures over 1907, it must be noted that the 1908 figures include expenditures of the port-works division for the entire fiscal year, while the 1907 figures include only the expenditures of that division for half of the fiscal year, owing to the fact that the port-works division was previously a separate bureau and was not merged with the bureau of navigation until December 10, 1906, as per Act No. 1568. (Incidental to this merger, ₱88,600 was provided for the running expenses of the port-works division by resolution of the Philippine Commission, dated January 11, 1907. Of this amount ₱81,052.83 was expended.)

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Attention is also invited to the fact that the figures for the port-works division for the second half of the fiscal year 1907 do not include expenses for salaries and wages of engineers, office force, and incidentals, such expenses having been covered by special permanent improvement appropriations and paid from bond fund. Beginning with the fiscal year 1908, however, these expenditures have been included in current expenses, and amount to, roughly, ₱300,000 per annum. This, of course, explains the increase in the 1908 over the 1907 current expense figures. It also explains the large difference in the amount appropriated for 1908 as compared with that appropriated for 1907, as well as the difference in the net cost of operation for the two years.

Greater efficiency has been obtained by concentrating the administrative force, with the exception of the superintendent of interisland transportation, in the new offices on Engineer Island. The year has been marked by an increase in expenditures and receipts over the fiscal year 1907 in the division of vessels, showing a large increase in the value of services done for the government. Attention is called to the following comparative expenditures and receipts of operating for a period of five years:

Division of vessels.

Year.	Expenditures.	Receipts.	Net expenditures.
1904	₱1,298,892.60		₱1,298,892.60
1905	1,159,342.28		1,159,342.28
1906	1,059,770.62	₱192,091.85	876,678.77
1907	866,479.85	450,295.48	416,184.37
1908	1,444,280.82	731,501.30	712,779.52

The increase of approximately ₱577,800 in the gross expenditures is explained by the fact that the division of vessels pays for all supplies for the bureau, pays for the light-house tenders, furnishes service free of charge to the light-house division, and furnished launches and scows free of charge to the division of port works. Roughly, the increase may be divided as follows: ₱145,408 for increased cost in operating extra cutter for light-house service, increased cost of operation of launches due to a greater service and cost of additional vessels operating on regular commercial routes; ₱83,000 for purchase and construction of launches, lighters, etc., and repairs to vessels (the cost of repairs on the coast guard cutters will increase from year to year as they get older); and ₱349,392 for increased cost of supplies through advance in prices and for purchase of supplies by the division of vessels for the other divisions in the bureau. Heretofore the other divisions bought their supplies direct, but this year the division of vessels has purchased all supplies for the bureau and has been reimbursed by the other divisions for the supplies used by them.

In spite of the fact that the gross expenditures have increased, it should be remarked that the receipts have increased in like manner and that the net expenditures come well within the appropriation of ₱722,000 for the division of vessels.

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The policy of placing government vessels on new commercial routes and stimulating trade until it has increased enough to warrant private concerns running steamers, has been followed with satisfactory results, and the operation of the interisland contract steamers continues to be successful. Although the main arteries of commerce will soon be well maintained by the interisland contract lines and railroads, the feeders of these arteries are just as important, and for that reason secondary routes are being established as opportunity offers. The next important step must be the improvement and development of the smaller harbors and navigable rivers, for the bulk of the country's produce will always be handled by water transportation. Heretofore the largest amount of work has been done on the harbors of Manila, Cebu, and Iloilo. Much remains to be done in these ports, but in future special stress should be laid on the improvement of smaller ports and waterways with a view to making transportation safer and the handling of freight cheaper and easier.

Interisland Transportation Office.

During the past fiscal year 4 routes have been inaugurated on which government launches and cutters run, and 1 from Manila to Sandakan, British North Borneo, has been divided into 2, Messrs. Pujalte & Co. running their steamer without subsidy from Manila to Puerto Princesa and the government operating the cutter *Panay* from Puerto Princesa to Sandakan. The Union Ticket and Information Company has proved successful, and in connection therewith there has been started an interisland express company, which promises equally good results. As a further convenience to travelers a baggage examination building, adjoining this office, is being erected.

Division of Vessels.

It is estimated that the services rendered by the vessels of this division during the past fiscal year have been worth ₱552,938. Seagoing vessels visited 5,050 ports, an increase of 680 as compared with the preceding year; carried 15,296 passengers, an increase of 381; carried 6,542 tons of freight, a decrease of 434 tons, and steamed 292,908 miles, an increase of 2,908 as compared with the preceding year. The increase of mileage and in the number of ports visited is due to the opening of new commercial routes by government vessels with but small returns, there being in fact a decrease in the freight tonnage and but a small increase in the number of passengers carried.

A steel-frame semaphore tower, supporting a mast with a yardarm affixed 147 feet (44.80 meters) above mean high water, has been erected on Engineer Island, at the mouth of the river, and will be used for displaying typhoon signals and a time ball which will be operated from the observatory. The yardarm mast has been laid north and south and upon receiving information from the bureau of posts of a steamer passing either the north or south channel at Corregidor the house flag of the company owning her will be hoisted on the north or south end of the yard, as the case may be. This will enable agents concerned to get their papers, etc., through the custom-house with a minimum of delay, and should prove of great service to commercial interests.

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Light-House Division.

At the beginning of the fiscal year 1908 there were 117 lights, and at the close 128. Twelve new lights were established and 1 discontinued. These lights may be grouped as follows:

Flashing lights	29
Occulting lights	13
Fixed lights	3
Port lights	27
Lens lights	54
Electric arc lights	2
Total	128

There are now 123 buoys and 50 beacons in place. The general policy of replacing wooden towers and nipa houses by buildings of iron and concrete is being followed as fast as available funds permit.

Division of Port Works.

Much work has been accomplished by this division during the past fiscal year.

MANILA.

The Luneta extension was taken over by the city January 27, 1908, and is now being graded and prepared for building. Two new roads have been constructed across the old fill from the Malecon drive, one to the new Legaspi launch landing between the Luneta extension and the old fill, where a channel has been dredged to the depth of 10 feet, and one, which is practically finished, to the new wharves.

The steel wharves are nearing completion. Wharf B is practically finished, with the exception of laying the wooden pavement and wharf A will be finished some time in November. The contract for wharf abutments was approved November 4, 1907, and work which has been progressing slowly was started November 12 of the same year. The contract was extended three months on May 4, but the work is still unfinished.

In accordance with the recommendations of the committee appointed to advise on the best wharf railway system the previous plans for the sheds and railways were changed last autumn. The contracts, amounting to ₱181,814.775 for the wharf sheds and ₱12,779.6836 for the railways, were awarded April 10, 1908. The construction of the railway on wharf B was begun early in September, and of the sheds early in October.

Designs and estimates have been made for the construction of the retaining wall of the proposed Cavite boulevard, ₱100,000 of the ₱300,000 estimated as necessary to build to the army corral, in Manila, being at present available.

Dredging has been constant in the harbor and the Pasig River, showing good temporary results. To keep the river at a proper depth, however, properly designed river works must be constructed at the mouth of the Laguna de Bay and in the stretches where the channel shows constant tendency to shoal.

In November, 1907, a portion of the south river wall near the Magallanes monument collapsed. The adjacent wall has been back-tied and the removal of the capsized section was begun June 29, last. As soon as possible a contract for rebuilding the wall and extending it to the Bridge of Spain will be let.

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CEBU.

Work on the Cebu port works, under contract with J. G. White & Co., was completed April 15, though the final settlement for this work has as yet not been made. The available wharfage is 2,390 feet and there is berthing along the wall for vessels of 22 feet draft, and at the temporary wooden Government wharf, built in 1904, for those of 28 feet draft. Attention is called to the following table compiled from figures of actual savings furnished by the leading merchants of Cebu and the tonnage figures furnished by the Cebu custom-house, showing an estimate of the annual saving effected by the new port works even with the 400-foot haul over the loose fill:

Article.	Foreign.		Coastwise.		Total.	Saving per ton.	Total saved.
	Imports.	Exports.	Inward.	Outward.			
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*		
Rice	37,915	.....	.....	35,700	73,615	₱0.60	₱44,169.00
Baled hemp	.....	26,463	.....	.....	26,463	1.04	27,521.52
Loose hemp	.....	.....	24,600	.....	24,600	2.08	51,168.00
Copra	.....	17,235	16,900	.....	34,135	.60	20,481.00
Sugar	.....	16,401	15,500	.....	31,901	.50	15,950.50
All others	9,251	81	41,000	36,980	87,312	.85	74,215.20
Total	47,166	60,180	98,000	72,680	278,026	.....	233,505.22

ILOILO.

By Act No. 1650, there was made available ₱170,000 for rebuilding the quay wall and widening Muelle Loney. The contract was awarded May, 9, last, and an additional ₱100,000 was appropriated by Act No. 1837 for the continuance of the work, which will be done under the same contract.

ESTIMATES OF COST SUBMITTED.

During the fiscal year covered by this report 13 ports were surveyed. Reports with estimates of cost were submitted on Aparri Harbor, Cagayan River, and Dayhagon Canal.

PHILIPPINE COAL SUPPLY.

During the fiscal year, so far as practicable, Philippine coal has been used by government vessels; for although its calorific value is less than that of the Australian coal, its low price makes its use economical. At present it can be obtained only in limited quantities as there is but one mine in Batan, Albay, whose output does not exceed 40 tons daily, which is supplying the demand. It is believed, however, in the near future that the daily production in this mine will be increased by several hundred tons, and that the coal will be better, as heretofore its quality has improved as the mine developed. Adjacent to this mine the United States Army is developing a coal property, and at Danao near Cebu there are other coal mines which promise well.

In time it is thought that an abundance of coal of as good quality as is the Australian coal will be mined in the Philippine Islands and

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thus the country will be relieved of the annual financial drain for the coal imported from Australia and Japan.

For further information and details attention is invited to the report of the director of navigation, hereto attached, marked "Exhibit J."

COAST AND GEODETIC SURVEY.

Cost.

The total cost of the work last year was ₱582,492.68, of which about ₱390,000 was paid from United States funds. The total cost of the preceding years was: ₱380,850 for 1905; ₱518,054 for 1906; ₱544,762 for 1907. The total expenditures of the bureau from insular appropriations for the fiscal year 1908 were ₱184,821.06, as compared with ₱172,747.68 for the fiscal year 1907, an increase of nearly 7 per cent.

The receipts of this bureau were so small as to be a negligible quantity.

The insular appropriation for 1908 was ₱205,000, as compared with ₱190,000 for the fiscal year 1907, an increase of about 8 per cent. The appropriation for 1909 is ₱195,000, a decrease from 1908 of 4.88 per cent.

The average cost per kilometer surveyed in 1908 was ₱383.41 (per mile, ₱617.04), and for 1907, ₱408.81 (per mile, ₱657.92), a decrease of 6.2 per cent from 1907.

Progress of Work.

At the close of the fiscal year 29.7 per cent, exclusive of Spanish and British work, of the entire general coast line of the Philippine Islands had been surveyed for charting, as compared with 21.5 per cent at the close of the fiscal year 1907, an advance of 8.2 per cent during the year. In distance, the amount now surveyed represents 3,418 statute miles (5,500.76 kilometers) of the entire length of the general coast line of 11,511 statute miles (18,525 kilometers).

During the year 944 statute miles (1,519.23 kilometers) of general coast line were surveyed, as against 828 statute miles (1,332.54 kilometers) in 1907, 431 statute miles (693.63 kilometers) in 1906, and 358 statute miles (576.15 kilometers) in 1905, an increase of 14 per cent for 1908 over 1907.

The joint arrangement between the United States and the insular government under which the survey is operated remains unchanged.

Personnel and Equipment.

There were 55 Americans and 244 Filipinos employed, practically the same as during the year 1907.

The following is a short summary of the work:

Number of vessels employed	5
Number of chartered launches employed	2
Number of officers and men on vessels	284
Number of miles general coast line chartered	944
Area sounded over (square miles)	9,614

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An elaborate system of tidal observations forms part of the work of all hydrographic parties, and 2 self-registering gauges have been maintained during the year—one at Manila and the other at Iloilo. Magnetic observations are also regularly made.

Geographical Division.

During the year a geographical division was created to collect and index maps, descriptive reports, field notes, and general information obtained from the army, navy, insular bureaus, provincial governors, etc., and to compile a new map of the islands. This office is now organized and ready to handle data as it is received. An executive order was issued to the different bureaus to send in such data as soon as possible. It is believed that this division will render very important service to the government by compiling a new standard map of the islands from information derived from all the above sources. At present a good deal of confusion exists, as the army, the different insular bureaus, and the provincial governments have different maps which by no means always agree with one another.

For further information and details attention is invited to the report of the bureau of coast and geodetic survey, hereto attached, marked "Exhibit K."

CORPORATIONS.

Under authority of the corporation law, Act No. 1459, orders for licenses for 60 foreign corporations were issued during the fiscal year 1908. Of these 19 are British corporations, 14 American, 12 German, and 15 are miscellaneous.

Respectfully submitted.

James F. Smith,
Acting Secretary of Commerce and Police.

To the Philippine Commission,
Manila, P. I.

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EXHIBIT A.

REPORT OF ACTING DIRECTOR OF CONSTABULARY.

DEPARTMENT OF COMMERCE AND POLICE,
BUREAU OF CONSTABULARY,
Manila, P. I., August 8, 1908.

SIR: I have the honor to submit the following report for the year ended June 30, 1908:

The director of constabulary went on leave of absence February 20, 1908, since which time the writer has performed the duty of acting director.

On the promotion of Col. H. H. Bandholtz, assistant director, to be director, the vacancy thus made was filled by the appointment on July 3, 1907, of Capt. Herman Hall, Twenty-first U. S. Infantry, inspector for constabulary, to be colonel and assistant director. Capt. Dennis E. Nolan, Thirtieth U. S. Infantry, was detailed as inspector for constabulary on November 14, 1907. First Lieut. Louis J. Van Schaick, Fourth U. S. Infantry, was relieved from duty as inspector for constabulary on April 14, 1908, to accept the detail of governor of Mindoro.

The enlisted strength of the constabulary, including the medical division and band, consisted on June 30, 1908, of 4,607 men, and was distributed throughout the archipelago at 163 stations. No Philippine scouts have been on duty under the insular government during the year, and no United States troops have been called for by the governor-general.

PEACE CONDITIONS BY CONSTABULARY DISTRICTS.

FIRST DISTRICT.

The first district comprises Bataan, Batangas, Benguet, Bulacan, Cavite, Laguna, Nueva Ecija, Pampanga, Pangasinan, Rizal, Tarlac, and Zambales. Nueva Vizcaya was transferred on July 1, 1908, from the first to the fourth district. The capture this year of Severino Rodriguez, alias "Berong," who was Felipe Salvador's chief lieutenant, and commanded at the Malolos raid of 1906, and of Miaco, the constabulary deserter who led the jail delivery in Bataan in 1907; the destruction of de Guia's outfit and of Baliton's band of ladrones, which operated in Laguna, Batangas, and Cavite; and the decimation of de Castro's band to 3 members leave this district without any organized bands of active criminals. Felipe Salvador, the most dangerous outlaw on Luzon, and whose fanatical adherents of the Santa Iglesia are numbered by thousands in Pampanga, Nueva Ecija, and Bulacan, is, however, still at large. His influence over the lower classes in those provinces has defied the efforts of the government to capture him for the last five years. No overt act has been traced to him during the year. Carabao stealing is quite prevalent, though there is less than there was a year ago, and it is not the work of armed ladrones. The favorite method is to steal the animal, sequester him for a few days, until properly approached, and the owner pays a ransom to recover his animal, and drops the matter, not desiring the trouble, delay, and expense of following the thief to trial. This system can hardly thrive in a community where no influential citizens are profiting by it. This crime is much more difficult to overcome than the theft of animals not intended for ransom, but which are used or disposed of without documents at a distance from the scene

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of the crime. Manila is the favorite ground for disposing of stolen carabaos. The escape in June from Corregidor Island of 3 other desperate criminals under the lead of Fructuoso Vito, a life prisoner whose sentence of death had been commuted, threatens trouble this year in Cavite and Batangas. A policy which permits the sending to outside work, within a few miles of hundreds of his friends, of a bloodthirsty murderer and torturer on life sentence like Vito does not appeal to those who chased him through the jungle for years, and face the probability of doing it again, not to mention the expense to the government, and the hamstringing, lip cutting, etc., that may follow his return to his old haunts.

SECOND DISTRICT.

The second district comprises Tayabas, Ambos Camarines, Mindoro, Albay, Sorsogon, and Samar. The dispersion this year of Valerio Avila's band near the Ragay Gulf, the capture of Guinaha and Ugas in Albay, and the scattering of the following of Vargas and Deseo in Tayabas leave no organized bands of outlaws in this district outside of Samar, Esteban Deseo, in Tayabas, and Valerio Avila, in Ambos Camarines, are still at large, but without following at present. In Samar there is much improvement over conditions of a year ago. For the first year in four no troops but constabulary have operated in Samar. Otoy's band is supposed to have about 18 miscellaneous firearms, and is kept on the move. Since the beginning of the dry season several engagements have been had with scattered detachments of his following, the last of which a few days ago resulted in the destruction of the party of Simeon Angeles, the second pulahan chief left in Samar, and his own death from wounds. Banigoos, a brother-in-law of Otoy and a major under him, was killed in June. Ubaldo Diaz, Otoy's principal fighting man, was captured by Governor Cinco in the same month. The importance of Otoy is principally a newspaper fame gained in the last months of military operations in Samar, and he does not constitute the menace, for example, of Salvador, on Luzon, or of chiefs on Panay with much less fame. Conditions on Samar are more promising for permanent peace than at any time since the American occupation. Sorsogon and Mindoro have been entirely quiet during the year. Systematic animal stealing does not prevail in this district, although there is some in Tayabas and occasionally some reported from Masbate.

THIRD DISTRICT.

This district comprises Antique, Bohol, Capiz, Cebu, Iloilo, Leyte, Negros Occidental, and Negros Oriental. There are no organized bands of outlaws therein outside of Iloilo, where there are 2 of about 20 men each, with a total of 18 firearms between them. Alcachufas with 1 revolver and a few followers still hides in Cebu, and possibly passes occasionally to Negros. The capture of Santiago in October rid Negros Occidental of the last leader of an organization of outlaws. There has been some carabao stealing on northern Leyte, but it has practically ceased, and the turbulence which distinguished Leyte for the last two years ended with the surrender of Idos, the last pulahan chief, in October. Much carabao stealing prevails in Iloilo Province. This province lost its governor by assassination in December last, a victim, no doubt, of political feuds. The murder of two Americans, Mr. Everett, of the forestry bureau, and Mr. Wakeley, a teacher, and two Filipino assistants, by wild tribes in the mountains of Negros Oriental, occurred in May. It was not known until information was received that the party was lost that such a trip was contemplated or they would have been given suitable escort. There are some 20,000 wild pagans in the Negros mountains.

FOURTH DISTRICT.

This district includes La Union, Ilocos Sur-Abra, Ilocos Norte, Cagayan, Isabela, and Lepanto-Bontoc. In Cagayan is the subprovince of Apayao. Lepanto-Bontoc includes the subprovinces of Bontoc, Kalinga, Lepanto, and Amburayan. There are no organized bands of outlaws in this district. Carabao stealing prevails to a slight extent among the Christian provinces. The menace to peace in this district is the raiding of Christian communites by the fierce warriors of the mountains and the taking of heads. Of heads, 44 are known to have been taken, and, with dozens that were probably not reported, this represents the principal stain of crime on our Philippine record for the year. The Christian provinces of Ilocos Norte, Ilocos Sur-Abra, Cagayan, and Isabela are bordered by the mountain country from which come the head-hunters. The great

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prairies of the Cagayan River and Ilocos Norte are the constant scene of these bloody raids by Kalingas, Gaddangs, and Apayaos. It is in a way the war which in all ages has been waged between highlander and lowlander. It is not war for robbery nor dominance, but to take heads, as the American Indian once took scalps, and the head of old, young, sick, or infirm, of either sex, confers equal glory. These wild tribes are warriors, as wild as any that roam the earth, and their lust for the blood of the native Christian and for their tribal enemies is as strong as was, in its day, the thirst of the Sioux or Cheyenne for the blood of the paleface. The decline of head-hunting and its ever-present peril to the lowland provinces of northern Luzon are entirely dependent on the increase of constabulary stations in that region.

FIFTH DISTRICT.

This district comprises the provinces of Misamis, Surigao, and Agusan, and, within the Moro Province, the districts of Cotobato, Davao, Lanao, Sulu, and Zamboanga.

The recent capture of Salif Aguil, who was responsible for the uprising during the present year in the island of Basilan, on which island 2 American lumbermen, Messrs. Vermont and Case, were murdered on December 24, 1907, is believed to have put an end to organized outlawry in Zamboanga district. With the exception of a few outlaws, under the leadership of one Jikiri, in Jolo, which is garrisoned by the military and on which the constabulary do not operate, the only organized bands of outlaws in the fifth district are in Lanao. There are reported to be 5 bands, numbering in all from 265 to 400 men, armed with about 134 firearms of various classes. Their sphere of operation extends from the northern part of the province near Iligan to as far south as Mataling Falls. Ampuan Aguas is probably the most important of the leaders. Another, Ami Marur, is the one who shot and seriously wounded Governor Gard on February 19, 1908. These operations are generally confined to sudden and unexpected attacks on the cottas and rancherias of friendly Moros for the purpose of obtaining arms and food supplies. Surigao and Misamis have given no trouble during the year.

In the new province of Agusan, near the headwaters of the Umayan River, Mr. H. M. Ickis, of the bureau of science, and Private Napal Pastor, First Surigao Company, were treacherously murdered in May by a Manobo. The murderer is supposed to have committed the crime in the superstitious belief that he would thus avenge the death of his father, who died in jail during the Spanish régime. The work to be performed in Agusan is similar to that among the Igorots in the fourth district.

In Cotabato there have been a few cases of carabao stealing during the past few months. Davao has no organized bands of outlaws, but has small roving bands of pagans, who are continually fighting among themselves and who occasionally commit depredations against the coast natives. Human sacrifice is still practiced among certain tribes in the Davao district.

In Lanao numerous encounters were had with the outlaws during the year, in which both officers and men acquitted themselves with credit. Field service has been so arduous that time-expired men are not reenlisting, and those who remain are worn-out.

POLITICAL AND RELIGIOUS CONDITIONS.

In the election at the end of the last fiscal year for representatives, it may be said that the mass of the Filipino people took little part and less interest. Such enthusiasm as was shown was with small regard to any principle involved or to any issue affecting the Filipino people, but was evoked by the personality of the candidates. In one important Tagalog province, for example, but one citizen of any standing could be found who acknowledged himself anything but a nacionalista. The election over, the personal popularity of the nacionalista deputies waned, and, in the November elections, a man who had prided himself on his ultra-nacionalista views was elected as a progresista, and to-day nacionalistas in that province are as scarce as members of the opposite party were a year ago. There was considerable more interest shown in the November elections, showing that local affairs appeal more to the people. In either case, however, principle had little to do with the elections. The dominant class in every community fought out the battle on personal issues, appealing where necessary to the passions of the lower classes in order to obtain votes. The

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professional politician seems on the increase, and office seeking or holding is becoming a vocation which attracts many bright young Filipinos from better things to an extent which causes sincere regret to friends of the race. Generally, however, it may be said that political lines have not yet been so closely drawn that any accurate estimate of the views of the people at large can be had from any election yet held. The froth and effervescence of office seekers and of radical newspapers in Manila are not to be taken as indicative of the sentiment of the mass of the Filipinos, who above all things desire peace and a return of economic prosperity.

Differences in religion seem to be losing their political importance. There are indications of the waning of the Aglipay cult and a return of its adherents to the old-time faith. The restoration of property to the Roman Catholic Church, under the decision of the Supreme Court, even in communities heretofore solidly Aglipayano, has been attended with no disorder worth mentioning. Here and there during the year an occasional collision has taken place between adherents of different faiths, but nothing of a magnitude to threaten the peace. Protestant missionaries in nearly all provinces have gathered little flocks, actuated by one motive or another, but these show no material increase. In Samar there are Filipino priests in charge of but three parishes, the remainder being Spanish, and generally young men. The antipathy to the friar is not as great here as on Luzon. Some Roman and some Protestant missionaries are establishing schools and doing splendid practical work in uplifting the savages of the northern Luzon mountains.

The Colorum, Guardia de Honor, and Santa Iglesia, if these may be mentioned among religious faiths, showed no material change during the year. Their membership is all fanatical, ready to follow or forsake them under the leadership of plausible but unscrupulous scoundrels who exploit the poor, ignorant, and superstitious for carnal pleasure or commercial profit.

ECONOMIC CONDITIONS.

The great local drawback preventing a return of economic prosperity is the dearth of farm animals, rinderpest, surra, and foot-and-mouth disease still prevailing in certain parts. Locusts have plagued some provinces. In southern Luzon the small roots of the cocoanuts were damaged by the heavy earthquakes of 1907, and the yield of copra this year has been smaller on that account. The low price of hemp has distressed the great hemp-producing regions of southern Luzon, eastern Visayas, and southern Mindanao. Cholera rages in several parts of the archipelago. The rice crop in several of the central provinces of Luzon was a failure, but the demand for labor has been such that ladronism, once the first thought in a bad year, has not spread, and there has been no suffering. The desertion of great tracts of land, through laborers seeking employment on public works in and near Manila, does not, however, promise well for the agricultural future of a province. Generally, though, farmers seem to be hopeful for the future, and if the unproductive energy now wasted in politics and gambling could be diverted into proper channels the evils of pestilence and plague could be overcome.

PAGAN TRIBES AND MOROS.

In the subjugation of the pagan tribes of Luzon, Mindanao, Negros, and Panay; breaking up their hostility to each other; protecting the Christian provinces from their murderous raids; and generally bringing them under government influence, the constabulary will find a great field of usefulness for the future. As conditions warrant its diminution or withdrawal in the Christian provinces, or as prosperity may warrant its increase by the Legislature, every man that can be spared should be sent to the hills, where there is enough important work to outlast our generation. By the census the estimated pagan population of the islands is 388,644. Over one-fourth of this number, and of the most savage type, is found in the mountains of the fourth district, comprising northern Luzon. About 10,000 live in Ambos Camarines and on the Albay and Tayabas borders, but are practically harmless. They do not raid the settlements or practice head-hunting. In Negros there are approximately 20,000 wild, murderous, and untamed, and on Panay 14,000 ignorant, suspicious, and excitable, but not of the bloodthirsty type of Negros and northern Luzon. The remainder of approximately 112,539, exclusive of Moros who are not pagan, are found in Mindanao, principally in the subprovinces of Bukidnon and

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Agusan, and in the Davao region. These do not practice head-hunting, but human sacrifices are offered by some of those of Davao, and that those of northern Mindanao are savages is shown by the recent unprovoked murder of Mr. Ickis and his companion in Agusan.

It is not sufficient for the work indicated that constabulary shall be stationed defensively in the Christian provinces adjacent to these savage haunts, but stations must be located among them with a view to offensive operations if necessary; of demonstrating that the demands of the government for peace and for the cessation of their bloodthirsty practices are backed by armed force. Not even a novice in such matters would dispute that this is necessary if our demands are to be respected. We now have in the non-Christian section of northern Luzon only 240 men, among many thousands of wild warriors, but experience has shown that the presence of even a small armed detachment, under discreet and courageous officers, has an immediate restraining influence on the wild tribes in the vicinity of the station. Peace powwows with constabulary officers presiding are held. The chiefs gradually come to the officer for advice, and little by little his influence is extended. Those near the stations are required to have passes before going into the lowlands, which leads to identification where overt acts are committed. Commercial intercourse thereby gradually replaces head-hunting. Settlers from the Christian provinces begin to locate around the stations. Only a start may be said to have been made in extending stations through the mountains of northern Luzon, and practically nothing has been done in Negros, Agusan, and Bukidnon to reach this population through constabulary.

The constabulary opportunity among Moros is not less than that among the pagan tribes. We should not be misled by the belief that, because of the politico-military character of the government of the Moro Province, the work is being or should be done by the army. For nearly five years the constabulary of the Moro Province has done excellent work. It has passed beyond the experimental stage. A stationary attitude is not possible, however, and the numbers there no longer suffice, as more and more responsibility falls upon the corps as the Moros advance toward a civil government. Some increase is necessary, unless by withdrawal we are to give up ground already gained and confess failure or indifference in the matter of civil government for the Moros. The work can not be done by deputy sheriffs, by municipal police, or by any other organization as well as by constabulary. It means the patient listening to hours of conference so dear to the Moro heart; the careful earning of a reputation for justice; the unvarying control of self; and the permanence of officers in the locality. The enlistment of Moros has already worked for civilization among them in that the soldiers have acquired new habits, tastes, and ideas, which they are rapidly disseminating among their people. The time-expired Moro is a living witness to his people of the intentions of our government. That this class of duty can be better performed by the constabulary, whose hope of permanency lies in doing it well, whose limited forces encourage tact and diplomacy in handling these savages through their own people, whose men are often related by blood to those among whom they are stationed, than by the army, whose tour in the islands is a passing one, whose permanence is not affected by their work, and whose strength precludes the necessity for our methods, is to my mind not even a debatable question.

Among both pagans and Mohammedans the work requires discretion, self-control, courage, patience, and industry. It is performed in lonely and inaccessible places, often unhealthy, and under conditions that demand unrelaxing vigilance. It is likewise expensive, for distances are great and transportation scarce. It calls for the highest type of officer. The need for constabulary in Christian provinces is such that with the funds now at the disposal of the bureau this work can not be attempted as it should be. The regions inhabited by these tribes are unrepresented in the Legislature; the wild tribes raid poor taos, on the borders, whose political influence is negligible; the Moros plunder and murder; and there is a corresponding indifference on the part of the elected representatives of the people, who indeed feel that they have no responsibility for the non-Christian territory of the archipelago. Few, if any, educated Filipinos of the central provinces or Manila, and few Americans similarly situated, realize these perils of the mountains or the duty which our Government owes to these thousands of savages, who live in the barbarism in which they have existed since these islands rose from the sea; who, without votes, orators,

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or newspapers, and offering no inducements to the aspiring politician, are nevertheless entitled to their share of whatever benefit is dispensed by the United States in this archipelago.

MUNICIPAL POLICE.

This is a subject which I approach with little hope and no pride. Any progress worth mentioning is out of the question as long as municipal police constitute political patronage for local authorities. Any reform must involve a change in the law, and would properly vest the control in others than those who have made the failure which was probably inevitable under the present system of municipal police. Under Act No. 82 the police go out of office with the presidente, and this instability operates against their efficiency. Their appointment is the personal perquisite of the presidente, and they are consequently and subsequently messengers, muchachos, and servants. They are underpaid, which means neglect or graft. Some receive as low as ₱3 per month, and the average is about ₱10, while generally a laborer of the same class in life can earn up to a peso a day. There is no uniformity of pay, instruction, discipline, ratio to population, or armament. Just after the revolution an issue of firearms to the municipal police of a province was a proof of confidence in the governor, often an officer recently in arms against the government. From that the matter has grown until now a governor's political importance among his fellows is often measured by the number of guns he can get for his police, without regard to the necessities of the case. The table which follows this heading shows some of the inconsistencies which have thus arisen.[a]

The police of Samar are among the best the writer has seen. They bore their part in the field against outlaws as no other police in the islands, to my knowledge, have done. Eleven revolvers suffice for their armament in turbulent Samar. Iloilo, with about half the size and a better reputation for order, finds it necessary to have 21 rifles, 216 carbines, and 152 revolvers. Samar has 11 arms to 166 policemen; Iloilo has 389 firearms to 370. Why should Iloilo have over four times as many arms for its police as the combined provinces of Tayabas, Ambos Camarines, Albay, Sorsogon, Masbate, Mindoro, and Samar, which have 904 policemen to its 370? Tayabas, a much larger province than La Laguna, of identical population, and side by side geographically, has 10 revolvers to 165 police, while La Laguna has 196 rifles and 39 revolvers to 193 police. No one pretends that any of these policemen know how to use these arms. These figures can not represent difference in difficulty of policemen, turbulence of population, disparity in size, nor anything else than the vagaries and whims of different provincial and municipal authorities, with varying amounts of political influence, and can have no relation to actual necessities. So, too, in the ratio of police to population, or of police to territory, or in the ratio of officers and noncommissioned officers to patrolmen. Bulacan, with 3 corporals and 144 patrolmen, omits sergeants and lieutenants and boasts 14 captains; Leyte omits captains, but has 21 lieutenants, 25 sergeants, 35 corporals, and 276 patrolmen; Cebu has 1 lieutenant, 39 sergeants, 64 corporals, and 443 patrolmen. Long experience has indicated in military and police bodies a certain ratio of officers, sergeants, and corporals to privates, but in no two provinces of the archipelago are they alike, and probably not so in any two towns. Haphazardness, accident, confusion, and inefficiency reign everywhere. The best policemen are perhaps those of the fourth district (northern Luzon). By direction of the governor-general, the policemen of Cagayan, Isabela, La Union, and Ilocos Sur are under constabulary control. There the fact that the constabulary has a common head seems to inspire them with more pride, and inspections by an officer having authority over them, and having experience in police work, raises them to a higher standard. It has also permitted a system of combined patrols by constabulary and municipal police which works extremely well. Constabulary patrols going through the province are accompanied from one town to the next by one or more municipal police. On arrival, the latter are replaced by police from the next town and return to their own. This plan is attempted in other districts also, but not with the gratifying results obtained in the fourth.

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[a] A table showing the police force and armament in each province has been omitted and filed in the Bureau of Insular Affairs, War Department.

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It is believed that were the municipal police placed under the civil service, reduced in numbers, and better paid, a change for the better would be at once apparent. Under such a system, with provinces divided into sections, and a competent constabulary officer given the responsibility in each section for the instruction and discipline of the police, with power to unite them in case of emergency and public danger, and the authority of suspension, removal, etc., under civil-service rules, of incompetent and unfit men, conditions would permit of the withdrawal of the bulk of enlisted constabulary from a number of Christian provinces, and its employment in non-Christian regions, or its gradual diminution in numbers, to the great advantage of economy. Certainly the importance of the subject merits careful study by our legislators and a removal from politics. Year after year since its organization the constabulary has inspected municipal police, making the same reports as to evils which they can point out but are powerless to correct. Constabulary records are burdened with recommendations as to uniforms, arms, instruction, numbers, pay, and grades, made to authorities either without power or without disposition to carry them out.

PROVISION FOR DISABILITY CASES AMONG OFFICERS.

A dozen constabulary officers have been killed in action or have died of wounds so received since the organization of that body in 1901. Every officer who goes on an expedition against outlaws takes the chance of death or of maiming wounds. No other bureau of the insular government expects its officers to so risk their lives. Justice demands that government provision for pension in such cases be made without delay. We have now a pension and retirement fund created by court-martial fines of enlisted men and monthly exactions from officers and enlisted men. To this the government contributes nothing more than custody and investment by the insular treasurer. This fund, which provides for retirement of officers after twenty years' faithful and continuous service on a fraction of their pay at the time of retirement equal to 2½ per cent of it for each year of service rendered, will, it is estimated, with possibly necessary assistance from the government in the years 1917–1921, be sufficient to meet retirements for length of service. It will not stand any further burden, however, for total or partial disability cases than the pittance it now permits. Its provision for total disability is ₱40 per month for officers of the grade of captain and higher and ₱30 for officers below that grade. These are sums on which no maimed and crippled officer could possibly live. Three-quarter pay retirement should be allowed officers incapacitated for service by reason of physical disability incurred in the line of duty. "Line of duty" should be construed liberally enough to include all injuries not received through negligence or immorality. Young men in whom the spirit of adventure outweighs prudence will take chances of death or hopeless maiming, but we can not hold thoughtful officers permanently unless the government does as other governments do in similar cases, the United States for example, and recognizes by suitable provision that service which involves risk of life and limb against armed resistance has the highest of claims to its consideration.

THE SUPPLY DEPARTMENT.

The accounting system of the constabulary has undergone almost revolutionary changes this year. The system of returns for property has been discontinued, and all property accounts are now audited in this office instead of, as formerly, in the office of the insular auditor. This has materially increased the necessity of clerical assistance, which was not provided for in the new appropriations. The men and officers have been promptly paid throughout the year. The cash clothing purchase has proved more economical for the government than the old system, and the accounting is simpler. The difference in the cost of maintenance of the constabulary for 1907 and 1908 is but ₱400, which indicates that a normal cost basis has been reached and that the administration has been consistent and steady. The supply department has been most satisfactorily and economically managed; we are served by honest and alert men, anxious to maintain the efficiency of the organization and guarding well the comfort and efficiency of the officers and troops they serve. The accompanying report of the chief supply officer, Colonel Hersey, is worthy of careful attention from those interested in the fiscal administration of the constabulary.

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CASUALTIES.

During the period covered by this report the following casualties have occurred:

Name.	Deceased.		
	Cause.	Place.	Date.
Capt. W. B. Williams	Dysentery	Manila, P. I	Oct. 8, 1907
Third Lieut. G. Yasay	Consumption.	San Jose, Antique	Mar. 30, 1908

Name.	Wounded in action.		
	Nature of wound.	Place.	Date.
Second Lieut. J. A. Stader	Right heel, severe.	Basilan	Apr. 4, 1908

OFFICERS AND ENLISTED MEN.

The quality of our officers is improving. The Legislature abolished the grade of subinspector, a most important move in the direction of efficiency, and correspondingly increased the grades of first, second, and third lieutenant. The number of officers is less than it should be, considering the number sick, absent on leave, detached, etc., and does not give the proper proportion of officers to men. The constabulary school is excellent for young officers entering the service, and has steadily increased in efficiency under its present management. It is hoped that the exigencies of the service may at an early day permit the course to be lengthened. The school will be removed to Baguio on September 1. The advantages of this change are too obvious to require recital here.

The quality of our men is not what it should be. Our pay does not compare with that which they can earn outside the service, and our soldiers are worked so hard that any attractions the life might otherwise have are lost. The smallness of detachments and constant patrol work in many places so reduce the number of men available for guard duty that soldiers do guard with one and two nights off duty, and in some places have gone on guard continuously for long periods. In the United States Army only an emergency is held to justify the detail of men for guard with less than five nights between guards. No station occurs to me where our men get so many. The nominal strength of our companies is 50, which is a size that permits of instruction, and usually gives a sufficient number of men for guard, but for two fiscal years our appropriations have not been sufficient to maintain more than 46 men to a company. While this is a temporary economy, efficiency suffers in the companies. The drudgery of patrols and continuous guard are driving our trained men out of the service. The apparent economy will be costly in the long run.

There have been no substantiated cases of abuses reported this year. In letters from all provincial governors, with the exception of one, they expressed themselves as needing all the constabulary on duty in their respective provinces, and many insisted on an increase of their contingent, a net increase of 13 companies being asked for. Generally harmony with provincial and other authorities has prevailed.

The whole constabulary feels much encouraged by the recent action of the legislature abolishing the grade of subinspector, increasing the pay of first lieutenants, increasing the enlisted strength of the medical division, and granting longevity pay to officers. The spirit of the organization seems to me better than ever before, and I believe the government can count on its efficiency and loyalty with confidence and security.[a]

Very respectfully,

J. G. HARBORD,
Acting Director.

The SECRETARY OF COMMERCE AND POLICE,
Manila, P. I.

[a] A tabular statement showing the results of operations, arms captured, outlaws killed and captured, desertions, and casualties has been omitted and filed in the Bureau of Insular Affairs, War Department.

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APPENDIX A.

FIREARMS.

The new firearms law, Act No. 1780, enacted October 12, 1907, to take effect December 1, 1907, provided in substance that all licenses previously issued for firearms and which were valid on December 1, 1907, should continue to be valid until July 1, 1908; in other words, that all firearms must be relicensed by July 1, 1908. Many applications are still pending, but the question is receiving careful attention and all arms known to be in the possession of individuals will soon be relicensed or on deposit with the constabulary for safekeeping.

The following table is self-explanatory.[a]

REPORT OF CHIEF SUPPLY OFFICER.

HEADQUARTERS PHILIPPINES CONSTABULARY,
OFFICE OF THE CHIEF SUPPLY OFFICER,
Manila, P. I., August 17, 1908.

SIR: I have the honor to submit the following report for the fiscal year ended June 30, 1908:

DUTIES.

This office is charged with making the detailed estimates for funds necessary for the support of this bureau and with disbursing and accounting for funds appropriated in accordance with these estimates. This involves the supply of the bureau in every particular. These duties are performed through the medium of four divisions, namely: Medical, pay, property, and property accounting.

MEDICAL DIVISION.

The health of the command during the year has been excellent. While the medical division is entitled to its full share of credit for this satisfactory condition, the company commanders have contributed largely thereto by greater care in getting good and wholesome food, and the supply department, through its better facilities for transportation of the same.

Greater care is being exercised in enlisting stronger and more active men. There have been but two cases of smallpox in the past year, and 5,100 doses of vaccine have been administered. Though cholera has been rife in central Luzon and northern Panay, not a single case has been reported among our troops, which speaks well for the discipline of our command in following out the explicit orders given by our medical officers. Tuberculosis has decreased, probably owing to greater care in enlistments. The total number of admissions to hospitals for the past year has been 1,696, and the total number of deaths 28. Not only have our own sick and wounded been cared for, but indigent patients and employees of other bureaus in all parts of the islands to the total number of 624.

The cost of maintenance of the medical division, exclusive of salaries, was as follows:

Supplies on hand July 1, 1907	₱3,506.09
Supplies received during the year	8,584.19
Total	12,090.28
Supplies transferred	5,215.55
Total remaining on hand	6,874.73
Rents and contingent expenses	3,070.58

[a] Tabular statements showing the following information have been omitted and filed in the Bureau of Insular Affairs, War Department:

Licenses to possess firearms.

Appendix B. Constabulary strength and station list.

Appendix C. Casualties among enlisted personnel, desertions, and discharges.

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The medicine chest devised for companies during the fiscal year 1907 was found to be larger and containing a greater variety of medicines than was necessary. This has been revised and a more compact one costing one-half the money, ₱30, is now supplied to companies and paid for out of their savings.

There are at the present time 10 hospitals or wards connected with this bureau ranging from the thoroughly equipped hospital at Iloilo to a small ward of indifferent character at Tacloban, Leyte.

The superintendent of the medical division suggests converting the main squad room of the constabulary building at Malolos into a hospital. This suggestion is worthy of consideration. The town of Malolos is centrally located and all the sick and wounded of the first district could be readily assembled there.

Act No. 1873 gave the title of major to the superintendent of the medical division, an honor worthily bestowed, but with no corresponding increase of pay. The advisability of increasing the pay of the superintendent of the medical division to ₱5,000 per annum and of the number of captains by one and of decreasing the number of second lieutenants by one is submitted. The difficulty of maintaining a medical service of high grade with our limited opportunities for promotion and meager salaries is increasing. Attention is invited to the recommendation of the superintendent of the medical division in this connection that the pay of second lieutenants and first lieutenats be increased to ₱3,200 and ₱3,600 per annum, respectively.

One of the important accomplishments of the medical division in the past year has been the establishment of a standard of height, weight, and chest measurement as a minimum allowable for enlistment. This was the result of much careful labor both in the measurements and in compiling statistics.

By virtue of Act No. 1873 the number of enlisted men in the medical division has been increased from 57 to 100, as recommended by the superintendent in his last annual report. This increase became effective July 1, 1908.

Attention is invited to the report of the superintendent of the medical division, hereto attached.

PAY DIVISION.

The paymaster of the constabulary is still in charge of our money accounts, under the direct supervision of the assistant chief supply officer, but his duties have been materially changed during the past year. He makes all the cash payments in Manila, including those for Santa Lucia Barracks, but no longer distributes the money transferred to the various supply officers in the provinces.

Each supply officer is now furnished with a certain sum of money which we designate as his working capital, its size depending upon the needs of his station. As he makes a payment from this working capital he sends the voucher here and is immediately reimbursed for the exact amount, provided his payments have been accurate and in accordance with law. Thus his working capital remains intact, the full amount being either on hand or in transit to or from his station. No accounts current of disbursements are rendered under this system. It is simple and satisfactory. The change from the old to the new system became effective February 1, 1908.

Financial statement.

Treasury balance July 1, 1907	₱57,326.80
On hand (paymaster and supply officers) July 1, 1907	202,646.91
Appropriated by Act No. 1679	3,050,000.00
Receipts from operation	211,452.10
Total assets	3,521,425.81
Disbursed as per auditor's statement	3,503,679.51
Balance June 30, 1908	17,746.30

PROPERTY DIVISION.

By Act No. 1873 the offices of quartermaster, ordnance officer, and commissary officer were abolished and their duties consolidated under the property officer.

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The system of accounting to the auditor for all property in the constabulary by means of quarterly returns has been done away with. Final returns by all accountable officers were rendered on July 30, 1908. In place of that system each officer now keeps a card for each article of property for which he is accountable and on this a separate line for each transaction, showing receipt, sale, or transfer, with the balance on hand and the money value thereof opposite the last entry. By process of addition the amount and money value of the stock in the hands of each accountable officer can be readily obtained at any time. An annual inventory is made and sent to these headquarters.

A saving of ₱884.53 has been made on city transportation; there has been an increase of ₱3,299 on account of shipments to the provinces. This has largely arisen from the remodeling of the arms of the constabulary. Companies have sent in their old Krags to be equipped with rifle stock and bayonet, and then we returned the remodeled arm. In addition, we are now making a great many shipments direct to companies that were formerly made in bulk to supply officers and by them reshipped to the several companies. We have made a saving of ₱14,770 in forage. This is mainly due to the fact that for part of the previous year we had the Benguet stage line on our hands. We effected a saving of ₱1,900 on water transportation, but increased our expenditures for railway service ₱1,800.

The completion of the remodeling of the carbine has been effected. There have been equipped 3,365 carbines with rifle stock and bayonet during the past year. Company commanders are prone to place dirty and half-worn haversacks before inspectors instead of getting full value out of them.

A duplicate key to all field safes is now kept at these headquarters, so that, if the original is lost, a duplicate can be supplied, thus avoiding the necessity of breaking them open, as was often necessary previous to this year.

The deposits resulting from the enforcement of the new firearms act have made a great deal of additional labor and added not a little to our care and responsibility. This again brings forcibly to mind the recommendation of the writer, first made in October, 1905, that there should be a suitable steel cage inside of our bodegas wherein we could store our arms and ammunition. This has been urgently presented by the writer many times since, but so far without effect. We are running a needless risk of these comparatively unprotected arms falling into the hands of a mob that could have access thereto by the mere breaking down of a wooden door or a thin brick wall.

The commissary part of the property officer's work has been greatly reduced, there now being but three civil supply stores, one at Cervantes, Lepanto-Bontoc, one at Ilagan, Isabela, and one at Bayombong, Nueva Vizcaya. The total stock on hand at the end of the fiscal year was ₱4,178.85—one-fourth of what it was a year ago and one-eleventh of what it was two years ago. That this business has on the whole been well handled is best evidenced by the following remark from the report of the property officer: "We can return the amount advanced to the government to-morrow, and with a net earning of ₱33,277.72."

This does not include obsolete or well-worn arms, equipments, and spare parts pertaining thereto, which originally cost ₱257,105.43, and which we would probably do well to sell at one-tenth the original value. We are in correspondence with parties in Australia relative to the sale of same.

PROPERTY ACCOUNTING DIVISION.

Act No. 1873 also created a new division, called the "property accounting division," of which Capt. A. C. A. Bortels, late quartermaster of the constabulary, is now the head, under the title of "property accountant." He keeps for each accountable officer in the constabulary a duplicate set of cards similar to the ones described under the property division, which gives us an accurate check on all accounts. His work is an entirely new feature in constabulary accounting, and takes the place of an audit that was formerly made by the property division in the auditor's office.

He is enthusiastic about the ultimate success of this new departure and is organizing his office on careful and systematic lines. The property accountant renders no report this year, as the work he performed previous to the end of the fiscal year was but preliminary to the establishment of his system. We believe this will result in a more complete and satisfactory accounting of the property of the bureau; but accounting costs money, and while the system has reduced the clerical labor of every officer accountable for public property, it

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has not reduced the number of our officers in any way and it has materially increased the cost of clerical assistance at these headquarters. In order to meet the absolute needs of this new service, we have had to employ a number of emergency clerks, at the same time utilizing the services of newly arrived officers who are awaiting the beginning of the school term, September 1. These emergency clerks mean a draft on our funds which was not contemplated in Act No. 1873, and will have to be considered specifically in a subsequent appropriation.

GENERAL REMARKS.

We have now had one complete fiscal year under the new system of clothing the enlisted men provided for in paragraphs 1068 to 1080, Manual Philippine Constabulary, and experience has completely demonstrated its superiority over the old system both in simplicity of accounting and in actual saving to the government.

We have purchased the excellent piece of property that we have been renting for some years in Sorsogon, and are transferring the old stone camarine into a cuartel for the men and the house adjoining into officers' quarters. This fiscal year has witnessed the completion of our new headquarters building at Zamboanga, the cuartel and officers' quarters at Santo Domingo, Laguna, and the cuartel and hospital at Catbalogan, Samar, while the new headquarters building at Albay, the school building at Baguio, and the cuartel and officers' quarters at Santa Cruz, Laguna, are nearing completion.

The valuable services of the assistant chief supply officer have been recognized by a raise in salary from ₱4,500 to ₱5,000. The clerks in this office have maintained and increased their well-deserved reputations for efficiency, which this year has been recognized by such increases in their salaries as it was possible to give them. The supply officers in the provinces, 38 in number, have done their work efficiently and well. We are served by honest and alert men anxious to maintain the efficiency of this organization and guarding well the comfort and efficiency of the officers and troops they serve.

Last, and perhaps what is most important for our immediate future, attention is invited to the fact that Act No. 1873 calls for expenditures for the fiscal year 1909 that were not made in the fiscal year 1908, as follows:

Additional compensation for senior inspectors	₱25,000
43 privates of the medical division, at an approximate average cost of ₱614 per annum each	26,402
Abolition of the rank of subinspector and the distribution of these officers among first, second, and third lieutenants, an additional difference in cost to the bureau of	62,400
Increase in pay of first lieutenants	10,200
Increase in longevity pay	32,760
Organization of 4 district bands, 30 men each, 120 men at ₱614 per man per year	73,680
Total	230,442

The total increase for the fiscal year 1909 over the appropriation for the fiscal year 1908 is but ₱25,000. We are thus required to make an expenditure of ₱205,442 for which no appropriation has been made and no corresponding reduction in the expenses of the constabulary provided for. Following the auditor's division of our receipts and expenditures for the fiscal years 1907 and 1908, there was a difference of but ₱400 in the cost of the constabulary in the last 2 years, showing that we had reached a normal basis of cost. Two solutions are submitted for your consideration: Give timely warning that the constabulary as at present organized will need a deficiency appropriation for the fiscal year 1909 of ₱205,442, or muster out of the constabulary service without delay 8 companies.

Respectfully submitted.

MARK L. HERSEY,
Chief Supply Officer.

The EXECUTIVE INSPECTOR, BUREAU OF CONSTABULARY,
Manila, P. I.

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BUREAU OF CONSTABULARY,
OFFICE OF THE SUPERINTENDENT, MEDICAL DIVISION,
Manila, P. I., July 1, 1908.

SIR: I have the honor to submit the annual report of the medical division, bureau of constabulary, and of the health of the command for the fiscal year ended June 30, 1908.

The health of the command has been excellent. This in a great measure was due to the better supervision of the health of the men by their company commanders, to the better facilities for getting good and wholesome food to the different stations, and to more care in enlisting strong and active men, thus considerably reducing the number of days lost both in hospital and quarters.

With reference to the dangerous and communicable diseases during the past year there have been but two cases of smallpox, both in the fifth district.

When one considers that smallpox is more or less endemic in these islands and that only two cases were reported out of a command, approximately, of 5,000 men it is truly remarkable. This, of course, has been due to the prophylactic measures of vaccinating and revaccinating practically the entire command. Of vaccine 5,100 doses have been used during the year, and keeping this dread disease from spreading among our men shows the efficacy of vaccination as a protection against smallpox.

There has been no epidemic in the constabulary of dysentery, typhoid, or other communicable disease, although the consolidated report shows that several cases have appeared in the command from time to time, but were immediately taken care of by the medical officers and means taken to prevent the spreading of the disease and others from becoming infected.

Dysentery has dropped from third to seventh place in our statistics during the past year. This, I believe, was due to the greater care in diagnosing the difference between diarrhea and dysentery, because the number of diarrhea and dysentery cases of this year equal the combined number of these diseases of last year, but with the difference that the cases of diarrhea were increased and dysentery lessened.

During the past year there has been quite an epidemic of cholera in the central part of Luzon and the northern part of Panay. It is with much satisfaction that I report that not a single case has been reported among our troops, which, no doubt, was due to the line officers explicitly carrying out the instructions as to sanitation and hygiene given them by the medical officers of their respective districts. Especially was this noticeable in Capiz, Panay, where the surgeon, third district, organized a cholera camp, and our soldiers and "practicantes" acted as nurses and litter bearers, handling all the cases for the municipality without any of them contracting the disease.

The number of cases of tuberculosis has decreased considerably, owing, no doubt, to the better care being exercised in the enlisting of recruits.

The total number of admissions to hospitals for all causes in the bureau during the year was 1,696, the ratio per 1,000 strength being 340.

Number of days lost in hospital	8,165
Number of days lost in quarters	2,667
Number of deaths, officers	2
Number of deaths, soldiers	26

Total number of deaths being 28, or about 6 per 1,000.

The diseases causing the largest number of admissions to the sick list stand in the following order: Malaria, venereal diseases, beriberi, tuberculosis, diarrhea, bronchitis, and dysentery.[a]

Number of pensions granted during the past year were as follows: Rosario Lunat and Anastasia Rosal, widows; Vicente Anastasio and Marciano delos Reyes, minors; Sergt. Juan Abatalí, and Pvts. Mateo Garcia, Hilario Sajes, Cornelio Helves, Ambrosio Marzo, Cándido Pascua, Eustaquio Rellona, Timoteo Nicolas, Gregorio Larano, and Miguel Aguirre.

Besides the sick and wounded of our own bureau, your attention is invited to the work performed by our medical officers in the first, second, third, fourth, and fifth districts for indigent patients and employees of other bureaus, without remuneration. The statistics are as follows: [b]

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[a] Tables showing general health statistics of the constabulary by districts have been omitted and filed in the Bureau of Insular Affairs, War Department.

[b] Omitted and filed in the Bureau of Insular Affairs, War Department.

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MAINTENANCE.

The cost of maintenance of the medical division, bureau of constabulary, exclusive of salaries, was as follows:

Supplies on hand July 1, 1907	₱3,506.09
Supplies received during the year	8,584.19
Total	12,090.28
Supplies transferred	5,215.55
Total remaining on hand	6,874.73
Rents and contingent expenses	3,070.58

The amount transferred during the year was nearly ₱1,000 less than for the fiscal year ending June 30, 1907. In addition to this a great many permanent improvements, such as microscopes, operating tables, copper sterilizers, emergency cases, medicine chests, etc., are included in the above-mentioned transfer.

The ₱6,874.73 on hand June 30, 1908, seems very large, which is owing to the fact that the bureau of supply invoiced me during the last week of June a large part of my requisition for the fiscal year 1909, and this had to be taken up on my quarterly return ended June 30, 1908.

SUPPLIES.

Supplies purchased during this fiscal year have been of an excellent quality. The greater part have been purchased through the bureau of supply and were imported from the United States. A few purchases were made from the medical supply depot, United States Army, and a few on the open market.

Medical supplies to the extent of ₱352.50 were found at stations in the first district. These were returned to the storeroom and taken up on the quarterly return to the auditor. The quantity and quality of medical and surgical supplies forwarded to medical officers and company commanders has evidently been satisfactory and sufficient, as there has not been a complaint from any source concerning what was issued.

No doubt the saving in the amount of medical supplies transferred during this year was in a great measure due to the adoption of the medicine chests. These chests have done away with the wholesale distribution of medicines and surgical dressings, as was the case in the past. No supplies have been sent to companies other than what belong to the chest. Requisitions are easily compared and only such medicines or dressings have been furnished as the medical superintendent thought would refill the medicine chest and meet ordinary emergencies.

Of medicine chests, 73 have been purchased, of which 5 are in the medical division and 1 at the constabulary school. These 6 chests were purchased by the bureau, the remaining 67 by the companies from their savings.

One or two nonofficial complaints have been made that the medicine chest should contain a larger assortment of medicines. With this I most emphatically disagree, as I believe it contains all the medicines and surgical dressings necessary to meet ordinary emergencies. If everything was added, as suggested by the company commanders and medical officers, it would practically mean a wholesale drug store. It is also stated that when a native medical man was called in consultation to attend our sick or wounded he could not find what he wanted. In my opinion this would be the same no matter what was in the chest, as native medical men prefer to write their own prescriptions.

HOSPITALS.

There are at the present time 10 hospitals or wards connected with this bureau, ranging from the thoroughly equipped one at Iloilo to a small ward of indifferent character, as at Tacloban, Leyte. It should be so arranged that wherever a permanent building is constructed a part of it should be set aside for the use of a hospital, thus being ready for any emergency that may arise.

Wherever a medical officer is stationed a small building should be rented whereby he can establish a hospital, so that it can be a base for the teaching of "practicantes," a place for his equipment and for his office; moreover, to form a nucleus, and if circumstances should require, of transforming it into a larger hospital, thereby eliminating the necessity of being dependent on other

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organizations for the treatment of our sick and wounded. It is a rule that constabulary soldiers do not like to be sent to army or other hospitals, as they labor under the impression that they will not receive good treatment. This was clearly demonstrated a short time ago at the military hospital in San Isidro, Nueva Ecija, where a constabulary soldier suffering from pulmonary hemorrhage jumped out of the window in the middle of the night and returned to his company.

On account of the dangerous and arduous duties which both our officers and men are often called upon to perform, it seems only right that they should be given every care for the preservation of their health and a hospital of our own to be taken to when they are sick or wounded.

In connection with hospitals I would like to say that there is in the first district only a small hospital of six beds, situated in the constabulary school. This is often inadequate, as all the seriously ill and wounded are sent here for treatment, and often after the diagnosis is made they have to be sent to the civil hospital on account of the lack of facilities to handle such cases.

At the present time the constabulary building at Malolos is unoccupied, and I would like to suggest that the same or part thereof be used as a hospital. This town is centrally located on the railroad, and all the sick and wounded of the first district could be sent there for treatment.

ENLISTED PERSONNEL.

The maximum strength of the corps is 57. This number is not sufficient to enable us to send men to outlying stations and to do the work at the hospitals we have scattered through the archipelago, but with the increase made by Act No. 1873, Philippine Legislature, which takes effect July 1, 1908, our enlisted strength will be brought up to 100 and will enable us to comply with the requests from so many quarters for "practicantes."

COMMISSIONED PERSONNEL.

There are in the service 5 surgeons with the rank of captain, 1 of whom is superintendent of the medical division; 5 medical inspectors with the rank of first lieutenant, and 4 medical inspectors with the rank of second lieutenant.

RESIGNATIONS.

It is my opinion that the pay of first and second lieutenants of this division is inadequate, as is shown by the fact that in the past two years 5 men from these grades have resigned. As it is the aim of the superintendent to have the most competent men possible, it becomes apparent that it is hard to keep good ones at the present rate of pay when the entrance pay for the same work in other bureaus of this government is from $1,600 to $1,800 per annum.

WORK ACCOMPLISHED.

The quality of work and results accomplished in the treatment of the sick and wounded by our medical officers has been entirely satisfactory, but the amount done has been entirely out of proportion to their number; that is to say, that while a medical officer in the United States Army regularly has only 1 scout company of 103 men, our officers have from 8 to 10 companies of approximately 50 men each, scattered over a wide area, often taking days to go from one station to another.

Our medical officers are often called upon to perform duties outside of their regular routine work, such as taking care of the sick of other bureaus, teaching in the Philippine Medical College, district health officer, as in Nueva Viscaya or in Capiz, Panay, where, as stated above, one of our medical men, during the last outbreak of cholera, not only established a temporary hospital, using constabulary equipment, but took charge of same, using constabulary soldiers and "practicantes" as nurses.

During the past year, after much careful labor, a standard for the native soldiers has been arrived at in the office of the medical superintendent whereby the average height, weight, and chest measurement has been made to determine the minimum allowable weight and chest measurement in relation to the height for enlistment.

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RECOMMENDATIONS.

That all companies who do not possess a medicine chest have one furnished free of charge by the bureau.

That the pay of second lieutenants and medical inspectors be raised from $1,400 to $1,600, and that of first lieutenants and medical inspectors from $1,600 to $1,800 per annum.

That a hospital for the treatment of the officers and men of the first district be provided.

That the pay of the clerk in the office of the superintendent, medical division, be raised from ₱840 to ₱948 per annum, which is provided by law for a clerk in class G.

Respectfully submitted.

SAMUEL C. GURNEY,
Superintendent Medical Division.

The CHIEF SUPPLY OFFICER, BUREAU OF CONSTABULARY,
Manila, P. I.

BUREAU OF CONSTABULARY,
OFFICE OF THE PROPERTY OFFICER,
Manila, August 10, 1908.

SIR: I beg to submit for your consideration the following report for the fiscal year ended June 30, 1908:

The quartermaster and ordnance divisions are carried as such from June 30, 1907, to March 31, 1908, the date of the consolidation of the two under what was later designated as the property division. The commissary division is carried during the entire fiscal year distinct and separate, to enable a more perfect and unbroken accounting, and the property division from March 31 to June 30.

QUARTERMASTER'S DIVISION.

CITY TRANSPORTATION AND COST THEREOF.[a]

The carts and wagons mentioned in the table omitted were used in hauling supplies to and from railway depot, to vessels and lighters in the Pasig, and the carromatas in carrying officers and employees.

A saving of ₱884.53 has been made on city transportation over fiscal year 1907, and the service rendered by the city has been satisfactory.

ISLAND TRANSPORTATION AND COST OF SAME.[b]

This year's shipments exceeded those of 1907 by 1,000 packages containing 10,000 cubic feet, and were made at an additional cost of ₱3,299. This was due to the large number of shipments of ordnance in the rearming of our troops and of those direct to companies in smaller quantities instead of consolidated lots to the supply officers. This table does not include forage or supplies shipped direct by the bureau of supply. The amount and cost of the forage from Manila to the nearest port or station were as follows:[c]

The purchase of imported forage was reduced 256,000 pounds of hay and 279,000 pounds of oats, as compared with the fiscal year 1907, at a saving of ₱14,770. It must be considered, however, that during the fiscal year 1907 we had the Benguet stage line on our hands for two-thirds of the year.

LAND AND WATER TRANSPORTATION IN THE PROVINCES OWNED BY THE BUREAU.[d]

The total cost was ₱103,972.98, an increase over 1907 of ₱7,683.13.

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[a] A table showing this by months has been omitted and filed in the Bureau of Insular Affairs, War Department.

[b] A table showing island transportation and cost of same has been omitted and filed in the Bureau of Insular Affairs, War Department.

[c] Omitted and filed in the Bureau of Insular Affairs, War Department.

[d] A tabular statement showing this in detail has been omitted and filed in the Bureau of Insular Affairs, War Department.

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TRANSPORTATION REQUESTS ISSUED AND COST OF SAME.

	Fares.			Number issued.	Amount paid.
	First.	Second.	Third.		
Interisland boats	757	6	2,560	1,285	₱28,974.88
Railroad	1,085	22	2,575	1,488	5,757.24
Total	1,842	28	5,135	2,773	34,732.12

We saved ₱1,900 on water transportation, but paid ₱1,800 more for railway service than during the fiscal year 1907.

REQUISITIONS AND SHIPMENT OF SUPPLIES.

	Fiscal year.		Increase.
	1907.	1908.	
Requisitions filled	736	2,281	1,545
Transfers made to provinces	988	1,491	503

The increase was due to supplying the commands direct instead of through supply officers, and to more frequent shipments, monthly, and in some instances oftener, instead of quarterly, as during 1907. While this has greatly increased the cost of supply, the efficiency of the troops fully warrants the outlay.

FINANCIAL STATEMENT.

DR.

Value of stock, June 30, 1907	₱258,767.85
Purchase to March 31, 1908	223,281.76
Received from the provinces to March 31, 1908	25,971.56
Total	508,021.17

CR.

Value of shipments to provinces, March 31, 1908	239,140.60
Value of sales to March 31, 1908	3,326.39
Value of stores condemned	4,765.46
Value of stock, March 31, 1908	260,788.72
Total	508,021.17

Our only outstanding liabilities are for transportation, amounting to approximately ₱5,000.

ORDNANCE DIVISION.

The fiscal year has witnessed the completion of the rearming of our troops, 3,365 carbines having been remodeled and shipped to the provinces during such time.

Every effort has been made to do away with a long-established custom of shipping half-worn equipment, canteens, haversacks, belts, etc., back to the depot. I believe that inspectors should pay special attention to these articles stowed away in storerooms by company or other commanders. An old haversack will answer all purposes for hikes or on campaign, and officers should be instructed to get every possible use out of such articles of equipment and then have them destroyed at station.

The repair work at the depot has netted the government a saving that more than offsets the pay of the entire bodega force. On field safes alone the retention of the duplicate key and the repairing of all broken locks or parts has

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placed 38 safes, that would otherwise have been condemned and sold at a low figure, back on the active list as good as new.

Early in the year I discovered a method of changing the lock combination on these safes. Whenever a key is lost or stolen the combination is changed and new keys fitted at an average cost of ₱1.50.

We are under deep obligations to the officers of the Manila ordnance depot. Major Burr and his assistants have been extremely obliging and accommodated us time and again. The work of repairing and rebluing our arms done by them has been very satisfactory. The following will give an idea of the work and cost thereof:

STATEMENT.

October 3, 1907, for modifying 2,337 United States magazine carbines, caliber .30, and repair of 26 Winchester repeating shotguns	₱7,405.10
February 6, 1908, for modifying 1,016 United States magazine carbines, caliber .30, and purchase accessories and spare parts for same	10,618.04
February 21, 1908, for modifying 12 United States magazine carbines, caliber .30	368.56
Total	18,391.70

The total shipments of ordnance for the nine months amounted to 457, valued at ₱129,474.38.

FINANCIAL STATEMENT.

DR.

Value of stock on hand, June 30, 1907	₱297,197.69
Purchases to March 31, 1908	69,694.83
Received from provinces to March 31, 1908	75.584.45
Total	442,476.97

CR.

Shipments to provinces	129,474.38
Sales to March 31, 1908	4,042.35
Stores condemned	7,274.24
Stock March 31, 1908	159,161.57
Stock carried, value pending	142,524.43
Total	442,476.97

FIREARM DEPOSITS.

The deposit caused by the new firearm act and the shipment of all deposited private arms from the provinces has made this section one of considerable importance. The increase in number of deposited arms has been enormous. Some radical steps should be taken to get rid of the greater part and rid the government of their care and keep; but in the face of the general opposition to the new law and public feeling on the subject I do not feel like making any recommendation on the subject at present. If the arms were all owned by American or other foreign residents the matter could be easily remedied by allowing a certain period for exportation at expense of owner. The owner could then ship the arm or arms to friends or relatives living outside of the islands. The greater part are owned by natives, however, so that such action would not be far-reaching. The cross-reference system now well under way is proving a great saving in time and labor in tracing lost or doubtful arms.

No action has yet been taken by the bureau of public works to install a steel cage for the protection of government and private arms now in our bodegas. The seriousness of the danger of these unprotected arms falling into the hands of a mob by the mere breaking down of a wooden door and the consequences arising therefrom certainly merit prompt action along this line.

COMMISSARY DIVISION.

The close of the fiscal year sees the commissary or civil supply stores almost a thing of the past.

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The following table will give you an idea of the decline during the past three years:

	Fiscal year.		
	1906.	1907.	1908.
Stock in provinces	₱45,317.72	₱16,154.50	₱4,178.85
Sales	420,616.44	88,251.67	30,126.41
Transfers	219,994.61	57,446.51	26,562.01
Surplus earnings	37,571.96	29,435.35	33,277.72

The excessive loss charged to 1907 is due to error in statement of defaulting officers' accounts, the amounts having been deposited later by the bonding companies.

Glance at the reduction in stock during these two years, ₱41,138.87, then note the loss of ₱4,294.23 in net earnings. This loss represents 10.3 per cent on stock reduction—that is, we have closed out 32 branch commissaries, and worked off all old and surplus stock with this small loss, which is not a loss in reality excepting in net earnings. We can return the amount advanced to the government to-morrow and with it a net earning of ₱33,277.72.

The following statement shows the transactions for the year:

DR.

Stock in the provinces June 30, 1907	₱16,154.50
Shipped to provinces during fiscal year 1908	26,562.01
Total	42,716.51

CR.

Sales during fiscal year 1908	36,126.41
On hand June 30, 1908	[a] 3,375.61
In transit June 30, 1908	803.24
Loss by condemnation	829.49
Loss during year on reduction sales	461.56
Loss on transportation	1,120.20
Total	42,716.51

The cost of transportation to Bayombong was 24 per cent on actual sales, netting a loss of ₱1,471.07; to Cervantes, 25 per cent, a loss of ₱1,055.95. This was overcome to a certain extent by profits on stores sold at other stations at a profit, so that the actual loss was only ₱1,120.20 on total transportation or 4½ per cent over and above the 10 per cent surcharge.

The commissaries at Laoag, Lucena, Nueva Caceres, Tacloban, Tuguegarao, and Catbalogan have been closed and all stock disposed of during the year.

Financial statement, June 30, 1908.

ASSETS.

Cash in hands of insular treasurer	₱240,163.30
Cash in hands of officers	1,420.01
Stock in hands of officers (less 10 per cent)	3,375.61
Stock in transit to officers (less 10 per cent)	803.24
Total	245,762.16

LIABILITIES.

Civil government	212,268.84
Due bureau of supply	215.60
Surplus or net earnings on June 30, 1908	33,277.72
Total	245,762.16

[a] Ten per cent not included.

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PROPERTY DIVISION.

On March 31, 1908, the reorganization of the quartermaster, ordnance, and commissary divisions into a property division under one officer took place. At the same time the new accounting system was undertaken. It became necessary for a general overhauling of all stock and the consolidation wherever possible.

While there is no doubt a saving can be made by the consolidation, no great one may be expected, at least for the time being, owing to the fact that the number of requisitions and shipments have almost doubled. I do not care to pass judgment on the new accounting system at present. The experience of the three months leads me to believe that more labor is involved; still, this may not prove true after we have become more familiar with its details. An advantage of having the knowledge of the balance of stock on hand at any time without inventory is one of its best features, and the assets can also be easily determined. Still, the labor involved in making the value extensions on all papers is double that of the old system.

My idea is to carry a set of books, simple to keep, in connection with the cards, which will do away with the volume of labor attached to compiling a report such as this. These books will enable one to readily obtain data for any period, monthly or quarterly, and will carry the gains, losses, and expenditures at the depot in monthly periods.

The following financial statement will give you an idea of the transactions from April 1 to June 30:

STATEMENT.

DR.

On hand March 31, 1908, quartermaster	₱260,788.72
On hand March 31, 1908, ordnance officer	[a]159,161.57
Total purchases during quarter	122,542.88
Receipts from provinces during quarter	17,525.49
Manufactured	4,387.66
Taken up as found at station	1,280.97
Total	565,687.29

CR.

Value of supplies June 30, 1908	[b]403,904.71
Value of equipment June 30, 1908	25,845.09
Sales on interbureau vouchers	978.80
Transferred to stock, value pending	11,540.73
Transferred during quarter	111,467.17
Expended during quarter	10,023.29
Sales during quarter	1,927.50
Total	565,687.29

Respectfully submitted.

ASA F. FISK,
Property Officer, Philippine Constabulary.

The CHIEF SUPPLY OFFICER,
BUREAU OF CONSTABULARY,
Manila, P. I.

[a] Does not include obsolete arms and equipment or spare parts, cost value ₱257,105.43.

[b] Includes ₱5,218.53 on inventory and inspection report.

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REPORT OF DISTRICT DIRECTOR, FIRST DISTRICT.

FIRST CONSTABULARY DISTRICT,
OFFICE OF DISTRICT DIRECTOR,
Manila, July 1, 1908.

SIR: I have the honor to submit the following report of operations and conditions in the first constabulary district for the fiscal year ended June 30, 1908:

The district comprised the provinces of Bataan, Batangas, Benguet, Bulacan, Cavite, Laguna, Nueva Ecija, Nueva Vizcaya, Pampanga, Pangasinan, Rizal, Tarlac, and Zambales, the same as on the date of the last annual report. Nueva Vizcaya has been transferred from this to the fourth district, per paragraph 2, General Orders, No. 18, current series, bureau of constabulary, effective July 1, 1908, but is included in this report.

On the departure of Col. Herman Hall, February 14, 1908, on leave, for the United States, the writer assumed command of the district.

The strength of the constabulary therein is 72 officers and 1,317 men. Members of the medical division are included in this strength. While this force is adequate to cope with present conditions, a reduction would very much impair the efficiency of its service, and tend to encourage the agitator and habitual ladrone to reorganize, to the detriment of the present tranquillity which all of the provinces are enjoying.

Rents on June 30, 1907, were ₱1,576.83, and at the present date, June 30, 1908, ₱1,516.50.

PRESENT PEACE CONDITIONS.

Conditions as to law and order throughout the district show a decided improvement over those existing during previous years.

With the capture of Severino Rodriguez (alias "Berong," Felipe Salvador's chief lieutenant); the capture of Modesto Miaco, the constabulary deserter, who was the ringleader in the provincial jail delivery in Bataan Province; the destruction of de Guia's band and Baligon's band of ladrones, which operated in the provinces of Laguna, Batangas, and Cavite, and the decimating of de Castro's band, operating in the same provinces, to three members, there may be said to be no organized bands of ladrones of any importance now at large.

Filipe Salvador, who has many followers, fanatics of the "Santa Iglesia," has been unusually quiet during the past year, and his operations, if any, have been more in the nature of receiving voluntary support from either his followers or sympathizers. No overt act has been committed during the entire year that could be traced to this outlaw, either directly or indirectly. The influence of Salvador among the people is remarkable, as evidenced by the difficulty in obtaining information of any value whatsoever concerning him, and by the protection given him, which has defeated the efforts of our organization during the past five years to effect his capture.

Carabao stealing, however, still continues, though not to the extent that it did a year ago, nor are the thefts, as a rule, committed by armed bands. Our greatest difficulty to contend with is the system worked in some provinces, where the thief steals an animal from its pasture and takes it into the "bosque" and there keeps it hidden until he or a confederate can compel the owner to pay a certain sum of money for its return. As an owner seldom cares to spend the time or incur the trouble and expense which he knows will follow if the thief is denounced and brought before court for trial, the difficulty in overcoming this abuse can be appreciated. Animals stolen, however, for the purpose of selling in other provinces without documents are much easier to recover, as but few municipal treasurers care to take the risk of issuing certificates not in accordance with the law. Complaint, however, is made of the facility with which undocumented animals are disposed of in the city of Manila, and efforts are constantly made to intercept ladrones who attempt to reach Manila with stolen animals.

The peace conditions among the wild tribes have been very good, and the relations between the mountain people and their Christian neighbors, including the constabulary, are much more friendly; a growing feeling of confidence is noticeable, except in the district of Asin, Nueva Viscaya, and the Silipang district on the Isabela border. These tribes have not quite forgotten their old habit of taking heads, and their development and advancement generally has not reached the same stage as their more civilized mountain brethren. However,

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the head-hunting practice is very much on the decline, and with a continuation of the same progress that has been obtained in the past there is little doubt that this practice will be entirely eliminated. The influence of the constabulary in securing this result will be a very potent factor; in fact, what progress has been made among these people is due to the good judgment and earnest labors of constabulary officers, who have shown an aptness for that class of work.

POLITICAL CONDITIONS

As a general rule, the feeling manifested in the election of representatives to the Assembly showed an absence of interest in the principle involved, especially in view of the fact that the delegates were to be representatives to the First Philippine Assembly. What enthusiasm or interest was shown in the election might be traced to the candidates and their immediate followers, as it is not believed that political feeling or party principle had much bearing on the election of the successful candidates, but that they owed their success to the popularity the candidates enjoyed among the electors. The election for provincial governors and municipal presidentes drew a much stronger vote, excited more bitter feeling between the opposing factions, and demonstrated, by comparison, how much greater interest the people take in local questions. The same may be said with reference to the election of these candidates as those for the Assembly, that principle had little whatsoever to do with it. It is not believed that the political lines have been drawn so fine in any province in this district as to give an accurate estimate of the views of the people, as without doubt the casting of their votes has been due largely to a matter of sentiment with reference to the personality of the candidate rather than that of political principle.

RELIGIOUS CONDITIONS.

The religious conditions are but very little different from those of last year, except a possible reduction in the followers of the Aglipayan church and their return to their old faith, that of the Roman Catholic. In most of those towns where the courts have awarded possession of churches to the Roman Catholics the Aglipayanos have given up their holdings without any material act of resentment. In a few instances such feeling as was evidenced was against the particular priests placed in charge of the churches turned over to the Roman Catholics rather than against the church itself. There were, however, some cases where irresponsible persons took the law into their own hands and caused the destruction of church property, but in general the people at large, regardless of faith, have looked at the matter sensibly and conformed to the court's decisions in a manner which could not have been expected a few years ago.

The Protestant missionaries in nearly all of the provinces have also their little flocks of followers, but show no material increase over those of preceding years.

There is no material change in either the "Colorum," "Santa Iglesia," or "Guardia de Honor," all of them being more of less fanatics and ready to adopt the dogma of either of these three sects or any other new fad; their memberships being composed of the poor but ignorant and superstitious, ever ready to work out their salvation in accordance with the theories of plausible but unscrupulous scoundrels.

ECONOMIC CONDITIONS.

With the exception of the province of Pangasinan, where cholera is now prevalent, the general state of health may be regarded as being very good. In the province of Pangasinan cholera has been present for a number of months, and it would appear, through a lack of energy in the suppression of this disease, it has increased to such proportions as to give cause for alarm. The matter is now under the supervision of the bureau of health, and the provincial authorities have awakened to their responsibilities, so that it is presumed the necessary measures will be strictly enforced for the suppression of this disease.

While the loss of animals by disease has not been so great as in past years, still in the provinces of Batangas, Bulacan, Cavite, Laguna, and Tarlac rinderpest has had a foothold and carried off a large number of carabaos. Foot-and-mouth disease is now prevalent in these provinces.

Notwithstanding the belief that the people would suffer largely through failure of crops on account of the drought, and that Nueva Ecija's rice crop was almost a total loss, while other provinces suffered severely, in general there is

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little cause for dissatisfaction, prices being higher than those of last year and the demands for labor in and around Manila on public works having been such as not only to obviate the desire of those so inclined to turn to ladronism, but to prevent any suffering that might otherwise have resulted. The difficulty, however, is that in those provinces that suffered through failure in crops many of the fields now remain uncultivated, not so much on account of the animal question as to a want of laborers, who have left their homes and are employed on public works in and around Manila.

There seems to be a healthy sentiment among the farmers and a feeling of satisfaction that the coming fiscal year will be more fruitful in its results owing to prospective legislation favorable to agricultural interests in the Philippine Islands.

SPECIAL EVENTS.

On July 17, 1907, Second Lieut. L. A. Bailey captured Domingo Lumucso, Cavite's worst ladrone, with 1 Springfield carbine and 1 belt with 30 rounds of ammunition. This capture was of great importance to the province, as this outlaw was the leader in occasional robberies and depredations and had no little influence with the bad element in Cavite.

On October 30, 1907, a detachment of constabulary under the command of Lieut. H. J. Hawkins, Third General Service Company, engaged a band of outlaws within the jurisdiction of Jaen, Nueva Ecija, killing 2 members of the band and capturing 3 others.

On January 27, 1908, First Lieut. L. T. Rohrer, commanding officer First Batangas Company, encountered De Castro's band on Gonzales Mountain, wounding and capturing Marcos Almanzor, with 1 Remington rifle and 20 rounds of ammunition.

On March 24, conditions in Bulacan Province having, through the efficiency of the constabulary, reached a state of tranquillity, and there existing manifest need for constabulary in other provinces, the governor-general authorized the withdrawal of the two companies serving in that province for duty elsewhere. The provincial governor acquiesced in this arrangement, requesting the retention of a small detachment and two officers in his province for duty in the instruction of the police of the various municipalities. One company was sent to Pangasinan and the other to Cavite, leaving Major Long, senior inspector, and a detachment of six picked men in Bulacan. Second Lieut. H. J. Hawkins was ordered to the province to assist the senior inspector. Systematic and thorough instruction is being given the municipal police in their duties as peace officers.

On April 8, 1908, a band of ten ladrones, armed with revolvers and one or two carbines, entered San Pablo, barrio of Lubao, Pampanga Province, in which raid one of the inhabitants was robbed and one shot. On investigation it was learned that the leader of this band was an ex-constabulary soldier named Gabriel Garcia. With the able assistance of the presidente of Floridablanca, the constabulary succeeded in locating and capturing all of this band and securing the conviction of its members.

On April 16, 1908, Sergt. Ireneo Monson, First Batangas Company, encountered De Castro's band on Gonzales Mountain, killing Gregorio Ortillo and capturing 1 Springfield carbine, a bolo, and 15 rounds of ammunition.

On April 25, 1908, Lieut. E. W. Crockett, First Nueva Ecija Company, encountered a band near San Isidro, killing one outlaw and capturing another.

On June 18, 1908, a band of armed men was reported by the presidente of Zaragos, Nueva Ecija, as having been seen within the jurisdiction of Santa Rosa. The entire district was thoroughly searched by the First and Second companies of Eueva Ecija and detachments from Pampanga and Tarlac and two of the gang were captured and three carbines recovered.

On June 26, 1908, there escaped from Camp Avery, Corregidor, four desperate criminals named Fructuoso Vito, José Malabanan, and Erminiano Malabanan, all of Batangas Province, and Aniceto Duarte, of Cavite Province. Efforts are being made to follow these prisoners up and effect their recapture before they succeed in securing any following. The brutality of their leader, Fructuoso Vito, and the influence he has over his associates is impressed on all officers stationed where this band is liable to operate, as is the necessity for the speedy recapture of these outlaws.

The capture of Severino Rodriguez (Berong), Felipe Salvador's chief lieutenant, who lead in the attack on Malolos cuartel, by the constabulary of Rizal; also the capture of Andres Navarro, one of Felipe Salvador's ordnance officers,

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and one revolver; and Cirilo Yamat, who took part in the raid on Hermoso, Bataan, in 1904, in which the justice of the peace was killed; and the capture by First Lieut. H. Davis, Second Company, constabulary of Pangasinan, of Modesto Miaco, constabulary deserter from Bataan Province, who liberated twelve prisoners confined in Bataan provincial jail and armed them with ten Springfield carbines, of which Yamat was one of the prisoners, also Visita, who was captured by the presidente of Calumpit, Bulacan, accounts for all of the arms taken during that outbreak with the exception of one still out and two of the prisoners, who are in hiding and have been without molestation whatsoever during the past year.

CONSTABULARY.

The efficiency of officers and men is very much improved, not only in military duty but along civil lines, they having a clearer understanding of the rights of the people and the necessary procedures pertaining to their duties as peace officers.

Their relations with the people and the officials show a decided improvement, and there is a growing feeling of confidence in the organization. A spirit of cooperation is ever present between the provincial and municipal officials and the constabulary in suppressing all kinds of outlawry and crime, and the adoption of such measures as will aid in the peace and prosperity of their respective provinces or municipalities.

Constant patrols are made by all detachments of constabulary within this district, and while the peace conditions are in every way satisfactory, there is a general belief that the presence of these patrols is an assurance of protection to the people in isolated localities and a menace to the evil doer by reason of the unheralded visits of patrols, whose discontinuance would result in the return of the disordered conditions existing heretofore.

MEDICAL ORGANIZATION.

The constabulary medical organization is rendering excellent service, hospital-corps men fairly well instructed being assigned to each company when practicable. With most of the companies provided with medicine chests, the health of the men is as far as possible taken care of.

BUILDINGS.

The present arrangement for buildings is satisfactory.

SUPPLIES.

The subsistence and clothing of the men, and the supply system in general, is all that could be desired; each company has small savings from its mess funds, which afford means for recreation and advantages that would otherwise be denied.

TRANSPORTATION.

The present means of transportation are satisfactory, though a few more serviceable ponies are required to replace those lost by disease.

Hand cars should be at the disposition of constabulary officers where troops are stationed along the railroad for emergency calls. Their necessity is too apparent, particularly during the rainy season, to require any argument.

MUNICIPAL POLICE.

The municipal police in some of the provinces are much improved, while in others there is a want of interest in their betterment shown either by the municipalities or by provincial authorities. The ordinary municipal policeman is a very much abused "hombre." A salary averaging about ₱10 per month would seem not quite sufficient to appeal to such persons as would have an intelligent understanding of their duties as peace officers. This can be better understood when it is known that this class can earn from ₱1 to ₱1.50 per day as laborers. The result is that the material from which the ordinary policeman is drawn may be said to be the no-account class, and as police officers ordinarily they do not improve. Furthermore, their appointment and continuation in the service should not be made in payment of political debts

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and subject to removal on each change of municipal presidente, but should be determined for some definite period in order that their tenure of office be more secure. An effort is being made by all the senior inspectors of this district to train the municipal police in their duties and impress on them a strong sense of their responsibilities as peace officers. Greater success would no doubt be obtained were the standard higher, even if the number were less. It is believed the amount of money expended for policemen as a rule would be ample were it distributed among a lesser number. Where the police are under the supervision of the constabulary, in accordance with Act of the Commission No. 781, or even where a disposition is shown by the authorities to have the constabulary supervise the police, the beneficial results have been in every case very apparent, aside from the part it has played in improving the relations between municipal officials and the constabulary and in bringing them closer together.

CONCLUSION AND RECOMMENDATIONS.

Notwithstanding the apparent peaceful conditions that prevail throughout the district by the elimination of organized bands, the want of security on the part of the farmer still continues, owing to the persistent vice of carabao stealing. The many ingenious schemes that are used by these ladrones to accomplish their purpose and defeat justice make more difficult their conviction. The present law is not effective enough to reach the ladrone who keeps animals stolen by him under cover until such time as the owner conforms to the conditions demanded by either the ladrone himself or his representative. Nor is it sufficient to mete out punishment to those having strayed animals in their possession an indefinite length of time, where no steps have been taken to restore the animal to its rightful owner or to report it to the municipal authorities. As the injury to the small farmer by the animal stealing is the same whether it is committed by one or two persons or by an organized band, and the prejudice and want of security is no different, it is recommended that the present law be so revised as to provide for an adequate penalty, but with the same far-reaching influence as has the Bandolerismo Act.

It is recommended that section 1258 of the retirement law be amended by striking out the proviso concerning government responsibility and substituting therefor:

"That when the exigency of the service requires the separation of an officer from the Philippines constabulary, and he has rendered faithful and satisfactory service for a period of ten years or more, the provisions herein contained shall apply with equal force and effect to such officer and entitle him to all the benefits and emoluments as provided herein."

The attached tables show the work accomplished by the constabulary, and the present personnel, equipment, and efficiency of the municipal police of the district.[a]

Very respectfully,

THOMAS I. MAIR,
District Director.

The EXECUTIVE INSPECTOR, PHILIPPINES CONSTABULARY,
Manila, P. I.

The following report of the first district surgeon is herewith submitted:

HEADQUARTERS PHILIPPINES CONSTABULARY,
MEDICAL DIVISION, FIRST CONSTABULARY DISTRICT,
Manila, P. I., July 15, 1908.

SIR: I have the honor to submit the following report for the fiscal year ended June 30, 1908: The general health of the officers and men has been very good with the exception of an outbreak of malarial fever at Santo Domingo, Laguna. This station is situated in the foothills of Laguna Province, and the condition was most probably due to the dense shrubbery that surrounded the quarters, for as soon as the place began to be cleared away the disease began to subside.

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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Venereal disease was comparatively rare, and this was most probably due to the fact that the company commanders are more rigid in inspecting their men.

Tuberculosis is met with occasionally, also chronic asthma and bronchitis, and in most of the cases the disease is far advanced and was most probably overlooked when the men entered the service, as formerly it was the custom to have the men examined by presidentes of boards of health.

During my term as district surgeon I inspected the following provinces: Rizal, Laguna, Pangasinan, Nueva Ecija, and Zambales. I found the men occupying good quarters, well ventilated, and with few exceptions furnished with dry-earth closets. All the companies had "gold-medal" cots, but the use of mosquito bars had in a great many cases been neglected.

Nearly all the companies had medicine chests and company commanders were well instructed as to their use. At a great many stations there was an overabundance of medicines and of such a character as to be dangerous in the hands of the ordinary layman. These were collected by Major Gurney and myself, turned in to the medical supply depot, and there taken up as found at stations.

As there are but two medical officers in the district, it has been customary to send the very sick men to the hospital constabulary school for treatment, the surgeon in charge in turn sending them to the civil hospital when necessary.

We have, all told, 14 practicantes in the medical division of the first district—2 sergeants, 1 corporal, and 11 privates. It is very apparent that this number is not sufficient, but under the new bill just passed, increasing the medical division to 100 enlisted men, every company will be furnished with a practicante as soon as practicable.

Major Gurney a short time ago inspected the hospital at Bayombong, Nueva Vizcaya, and in his report to the chief supply officer stated that it reflected great credit to the first district.

The following are the statistics of diseases in the first district:[a]

During the part year there were three deaths in this district. It is very apparent from the report that malarial fever predominates and that too much stress can not be put on the proper use of mosquito bars.

Finally, I wish to make the following recommendations: That every company be furnished with a medicine chest, pattern No. 2, to be furnished from the constabulary and not from company funds.

That the company commanders should be instructed to make their requisitions for medicines quarterly to obviate the necessity of the men being without medicine for any length of time.

That this district be furnshed with another medical officer as soon as practicable.

Very respectfully,

HENRY PICK,
District Surgeon.

To the ADJUTANT, FIRST CONSTABULARY DISTRICT.
Manila, P. I.

REPORT OF DISTRICT DIRECTOR, SECOND DISTRICT.

SECOND CONSTABULARY DISTRICT,
OFFICE OF DISTRICT DIRECTOR,
Albay, P. I., July 9, 1908.

SIR: The writer has the honor to submit the following report covering the period from July 22, 1907, to June 30, 1908:

From July 22, 1907, to November 19, inclusive, Col. J. G. Harbord, acting director, was in command of the district. On November 20 the writer assumed command and has exercised control up to the present time.

PEACE CONDITIONS.

Conditions as to law and order in the district are much improved over those reported in the last annual report. In Sorsogon and Mindoro no armed bands have been out during the year. In Ambos Camarines the two bands of outlaws

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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which had been operating since Spanish times were broken up the first part of the present year and their leaders either killed or captured.

Albay Province has no outlaw organizations at large, and the conditions are very good. With the capture of Apolonio Guinaha, an outlaw who had been out since the Spanish times, operating in the Jovellar district, and the apprehension by a detachment of Second Albay Company of Francisco Ugas, who had been stealing cattle and carabaos in different parts of the province, ladronism has died out.

In January of this year one of the largest robberies since American occupation occurred in Legaspi. The store of Teodoro Mathewdakis was robbed by unknown parties to the extent of ₱10,000 in jewelry, and to date the thieves have not been apprehended. Mathewdakis had the jewelry turned over to him by a Spaniard to sell for him on percentage. He has since left for a vacation in Europe.

There is only one tribe of non-Christians in the province. They are in the mountain district around Tiui and Polangui, and are on the best of terms with the Filipinos of that locality, working on their plantations, etc.

At the present writing peace conditions in Ambos Camarines are very good. From December, 1907, to March, 1908, operations were carried on against the band of of Valerio Avila in the southern part of Camarines Norte, which included such noted outlaws as Crisanto Avila, Pedro Avila, Emilio Avila, Victorio Avila, Juan Catingilan, Pedro Iriga, Marcos Duran, and Jose Bugnog, armed with two Remington rifles and two Colt's revolvers. During these operations Pablo Avila, a brother of the leader, Valerio Avila, and also one of the important leaders, with several other members, were killed, and several prisoners and guns were captured. This broke up the band and scattered it. Nemesio Vargas, one of the principal leaders, with a thousand pesos offered for his capture, and who had been out since the Spanish régime, fled to Tayabas Province, where Lieut. H. Ward Bowles, with a detachment of the Second Tayabas Company, captured him. Valerio Avila is the only outlaw now at large in the province, and he is in hiding, alone, without any followers. With their leaders gone, the members of the various bands have either surrendered or gone quietly back to their homes and settled down.

The wild tribes of Ambos Camarines are considered as in four classes, all based on the Negrito type. The Negritos of Camarines Norte are almost pure Negrito, and those of Camarines Sur are mixed with Malay. At one time these latter were inclined to be aggressive, but since the constabulary made a few expeditions against them a few years ago they have remained peaceful. Harmonious and peaceful relations exist between the Christians and non-Christians. There are about 10,000 of the latter in the province. There is very little intercourse between the different non-Christian tribes, they preferring to live alone and not to mix with one another. There are no head-hunting practices in the province. During the recent campaign in Camarines Norte the Negritos were very useful as secret-service men, and gave much needed information as to the location of the different camps of the outlaw bands. It is ever the effort of the constabulary to let these people know that it is their friend, and at the present time this corps holds quite a little influence over them.

In Mindoro the relations between the non-Christians and Christians are good. It is very difficult for the constabulary or other peace organization to get in touch with the wild mountain people, and only in cases where the officer sends a Filipino friend of the mountain barrio people ahead to inform them that a constabulary officer is approaching can he expect to find anyone in the barrios. In February Father Theodore Y. M. BN. de Stuard, stationed on Lubang Island, made complaint as to the conditions there, claiming that island was overrun with gamblers, criminals, etc., and that the municipal officials were all grafters. This was investigated by the senior inspector, and his report was forwarded to the executive inspector on June 4, to the effect that conditions there were no worse than in any other part of Mindoro, and that in cases of a criminal being on Lubang that was wanted by the authorities he was always turned over without any trouble.

At the present time there is much improvement in the conditions of Samar over those of last year. Ysidro Pompoc (Otoy), supposed to have 12 Springfield carbines, 2 Krag rifles, and 4 revolvers, with a following somewhere on the Suribao River, in the interior of Samar, and Lorenzo Gallano, in the mountains back of Gandara, with no guns, with the so-called "Maj." Saturnino Ladiao, chief of outposts of Otoy, are all the pulahan leaders and guns that are known to be in Samar. They are in hiding and constantly on the move.

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There are no wild tribes in Samar, the only people in the mountains being pulahanes or ex-pulahanes.

The constabulary exerts a great deal of influence over the people of Concord (Magtaon), a majority of whom are ex-pulahanes, and have cleared land, planted camotes and hemp, and have asked for work from the constabulary as cargadores. Operations in Samar are now exclusively in the hands of the constabulary, and the work up to date in cleaning out this remnant of pulahanism is very satisfactory, and on the whole peace conditions therein are much better than they have been before, and the writer, at the rate the constabulary has cleaned things up in the last couple of months, should be able to report within a short time Samar in line with the rest of the provinces in the district.

In Sorsogon proper there are no ladrones, and its peace conditions are very good. There are no wild tribes, and only about 75 non-Christians in the province, they being located near the town of Bacon, and get along very nicely with the Christians. In Masbate, near the town of Milagros, some carabao stealing has been reported. It is now under investigation.

At the present time there are no outlaw organizations at large in Tayabas Province, and only two important leaders of the remnants of the Papa Reus band, which was organized near Atimonan in the fall of 1904, and who again started to cause trouble for the authorities last spring. They are Esteban Deseo and Emeterio Odnimer. They have no following and are in hiding on the outskirts of the barrios. The other leaders "Viceroy" Marcelo Parafino, Luis Zatarain, Pedro Parafino, Gabriel Banal, Gil Anduque, Regino Orlanda, Silverio Reyes, Mariano Aguilar, Miguel Espinosa, Santiago Oriel (who appeared at Romblon under an assumed name), and a few others of less note, have all been captured or surrendered and brought before the court of first instance.

The reduction of forces in the Tiaong-Lucban section by the sending of the First General Service Company to Samar, seemed to cause a fresh impetus to cattle stealing in those sections, especially around Tiaong. Some of the thieves have been arrested and bound over to the court. The peace conditions throughout the province are good. There are only a few Negritos therein, non-Christians, located near the Camarines line, who live in perfect harmony with the Christian Filipinos. Head-hunting practices do not exist in this province.

POLITICAL CONDITIONS.

Indifference is shown for politics in several of the provinces, except among the office-seeking element. The common people seem content to let things remain as they are as long as they are left in peace.

In Albay Province considerable interest was taken in the election of a governor. Contested elections occurred in Ligao, Polangui, and Albay for the office of presidente. It was necessary to send a constabulary officer to Ligao the day before the election, as one faction had Señor Tomas Luna, one of the candidates, in jail on some frivolous charge.

A regular army of professional politicians has sprung up, filling Camarines Province with "hot-air" speeches, and making all kinds of rash promises to win the votes. Every town in the province has any number of parties. As soon as one man is seated in office the opposite party immediately tries to have him ousted, put in long "instancias," and air their grievances before the provincial board. The politicians have already arranged the slate for the next assemblymen, governor, third member, presidentes, and other municipal officials. Protested elections occurred at Baao, Iriga, and Fernando. The court of first instance annulled the election for presidente in Baao, Bato, Buhi, Caramoan, and Capalonga.

The people of Mindoro are clamoring through their assemblyman for an elected governor. This agitation is supposed to come from the office-seeking element. Lieutenant Van Schaick, of the army is now governor, having relived Governor Offley, who resigned.

In the last election in Samar for assemblyman very little interest was shown, probably through lack of knowledge by the people as to what it meant, but now, with the next election a year off, new candidates are springing up, and there is more interest. A great deal of interest was shown during the election for governor, in which Governor Cinco was elected by an overwhelming majority. One of the defeated candidates, Señor Vicente Jazmines, with only a few hundred votes, appears to have not been able to forget his defeat, and it is said that he is at the bottom of the false rumors circulating about the conditions in Samar.

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He was an officer of the government during Spanish times, and had a habit of striking people with a bejuco when they did not turn out promptly to receive him when he called in towns on inspection, and the people in Samar, remembering this, have said they would not vote for him. In his speeches he has told the people that they should forget what he did during Spanish times and to remember that they had an American government now.

There was only one important contest for election over presidente, and that was in the town of Villareal. Presidente Inocencio Hilvano thought he had everything his own way, but the morning after the election he found himself defeated, and he immediately protested, but his protest was overruled by the court of first instance. When the time came he refused to turn over the office to the newly elected presidente, and held out until the provincial board went to Villareal and installed the new man. The provincial fiscal recommended to the governor that ex-Presidente Hilvano be prosecuted for "usurpation of office," but nothing came of it. Governor Cinco belongs to the Progresista party, as well as to the leading element in Samar.

In Sorsogon Province considerable interest was taken by the leading element in the election for governor, and they succeeded in defeating ex-Governor Monreal's candidate, Cirilio Jimenez. Jimenez protested, but Señor Guariño, the elected governor, was seated by the court.

Very little interest was shown by the people of Tayabas in the election for assemblymen, except by the candidates themselves and their close friends. In the election for governor, third member, and for municipal officials, great interest was shown, and wherever the candidates got out and worked among the barrio people he got their votes and was elected. The elections in this province have resulted as well as could be expected, the presidentes being neither radical nor incompetent. The only contested elections before the court were those of Lopez, Mauban, Tiaong, and Atimonan, but they were allowed to stand.

RELIGIOUS CONDITIONS.

Religious conditions remain about the same as they were at last report.

Albay Province is represented by three sects, Roman Catholic, Aglipayan, and Presbyterian. Differences between the different beliefs occurred in the towns of Tabaco, Polangui, and Jovellar, Tabaco being represented by the Roman Catholic and Aglipayan, between whom there is continual strife. In Polangui the Presbyterian chapel was burned, and it was thought generally that it was done by the members of the Roman Catholic Church, but upon investigation no proof was forthcoming. During lent, in the town of Jovellar, while a baile was going on, the parish priest became enraged, and about midnight caused the bells to be rung, and the people, thinking a fire was raging, rushed from the dance hall, and some of the ladies were hurt jumping from the windows. Several reports have come in to the effect that the parish priests were making exorbitant charges for baptism and marriage ceremonies; but as a rule such matters are immediately taken up by the governor and the charges reduced.

The people of Camarines, with the exception of the partido of Laganoy, are Roman Catholics. In Laganoy the Aglipayanos are very much in evidence, and there is continual strife between the two churches. In other parts of the province religious conditions are quiet.

In Mindoro Aglipayanism is dying out, the people having found that they are taxed just as much by this sect as by the Roman Catholic Church.

In Samar religious conditions remain about the same as at last report. The people are extremely devoted to the outward observations of religion. The control of the priest is more absolute. Samar has a large number of Spanish priests, many of them young men, and the antipathy toward the friar does not appear as strong as in Luzon. Complaints have been heard of exorbitant charges for weddings and funeral ceremonies, and also to the effect that these friars are not in sympathy with the aims of the government. The only native priests in Samar are at Calbiga, Allen, and Zumarraga.

In Sorsogon Province the political prestige of the priest is more noticeable than in other parts of the district. The people are all Roman Catholic, but religion is looked on more as a social pastime and as an opportunity for the meeting of young people.

Tayabas Province is mainly Roman Catholic, but the Protestants have congregations at Tiaong, Lucban, Mauban, and Lopez. The Aglipaynos have a church in Lucban, but it is losing all of its best members; the better class of people are all returning to the Roman Catholic faith. The Colorum has adherents in

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two barrios of Tayabas, and in Dolores and Tiaong. The largest following of this sect comes from outside provinces—Cavite, Rizal, Laguna, Batangas, Nueva Ecija, and Bulacan. They create no disturbances, have no political aims, and are at present peaceful and no doubt will be as long as present leaders are in power. The so-called "Colorum," which was formed in 1904 near Atimonan, was composed of religious fanatics and had no relation whatever with the true Colorum. This section of the province is composed mainly of religious fanatics, and the people there could be roused up any time in three months if left to themselves under a "pillo" hombre. The different religious sects seem to get along together, and even some of opposite beliefs are friends.

ECONOMIC CONDITIONS.

During the fiscal year this district has been free from epidemics to any great extent, only a few cases of smallpox being reported around Tabaco, Albay Province, and Camp Menicke, Samar.

In Albay Province the low price paid for hemp and the increase in the price of rice is becoming a serious matter for the people. The work now begun on the Legaspi-Guinobatan road and the Ligao-Tabaco road will relieve the money stringency to some extent in those localities, giving work to those thrown out of employment on account of the nonworking of hemp plantations. The production of copra will be less this year than it was last, on account of the breaking of the small roots of the trees by the severe earthquake of last year. Surra recently appeared among the horses around the town of Albay, but has since died out. The provincial governor has prevailed on the people of many of the municipalities to start truck gardens. They are beginning to see the advantages of them, and many are raising different kinds of vegetables, which will go a long way to tide them over during the stringency in the hemp market. The hemp machine invented by Mr. Behrandt has greatly facilitated the work of hemp stripping, and a fiber of much better quality and bringing a better price than when stripped in the old way is produced. It is said that 200 more machines are soon to be brought into the province. The railroad company is going ahead very slowly, and when it is in operation the many animals now used for transportation purposes may be utilized for plantation work. The products of the province are principally hemp, copra, and rice, the exports being the first two. There is not enough rice raised for consumption on account of the scarcity of work animals, but it is thought that the coming year will see a great increase over last in the production of this crop.

Health conditions in Camarines have been excellent during the year in spite of the fact that the sanitary laws have not been followed very closely. The increasing prosperity of the province was greatly affected by the depression in the hemp market and the appearance of pests among other crops. The rice crop, though, has been the largest throughout the province of any in several years. The people claim that progress in agriculture is held in check for want of carabaos, but without doubt if the gambling element and politicians would get to work agriculture would be increased many fold. Some industrial improvements have been made during the year. Modern farming instruments are being introduced. Old roads have been reconstructed, and ₱40,000 were appropriated, and for the coming year ₱100,000 has been added for road building. The gold mines at Paracale are doing very well, and great activity is noticeable in that district. There is much unsettled territory in this province—for instance, the Caramoan, Ragay, and Capalonga districts—and the people are very reluctant in settling in those remote places.

In Mindoro Province cholera appeared in the island of Lubang, but the promptness of the health authorities prevented its general spread and only 20 deaths resulted. This island also lost some 500 head of animals from rinderpest. Agricultural pursuits are forging ahead in Mindoro through the influx of American planters, and considerable improvement has been noticed in the towns of Naujan, Pinamalayan, and Pola. The present outlook favors good crops for the coming year, especially so as regards palay, of which enormous quantities are being planted. The fall in the price of hemp caused only a temporary embarrassment in the province, the Mindoro output of this article being first class and bringing a fair price.

The health conditions throughout the province of Samar have been excellent, and no epidemic diseases have shown themselves except a small outbreak of smallpox among the constabulary at Camp Menicke. Generally the people seem to be prosperous and are not suffering from want of food. The price of

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hemp at the present time has caused some discontent, but otherwise everybody seems satisfied, and is clearing a great deal of land formerly not cultivated and planting same with rice, hemp, and camotes. The average poor man can clear and plant enough ground in two months to last him during the year, and in this way he is independent. Some complaints are made by the wealthy class about the scarcity of labor.

Last year locusts passed over the east coast of Samar and destroyed a few cocoanut trees, and in Sulat they crippled the mat industry for 6 months by eating all the "ticog" grass from which the mats are made, but at the present writing this business is as profitable as ever, and some of the finest mats of the islands are made here. The crops this year are much better than last, in spite of the fact that a large amount of land is lying idle for want of animals. It is estimated there will be plenty of rice for the next four months raised in the island. There is plenty of copra, which sells at ₱6.50; the people are cleaning hemp every day; and the price paid for this product will average ₱15 per picul the year round.

Sorsogon Province is not at the present time in a very flourishing condition on account of the low price of hemp. Just now it could produce more hemp than for years past, but the landowners are not harvesting any more than is absolutely necessary to keep their places going. In the subprovince of Masbate the people are principally stock raisers, and the number of cattle on that island is slowly increasing. There has been no disease among cattle for some years, and the prospect is gratifying. The province as a whole does not produce 10 per cent of the rice consumed.

Tayabas Province has been free from epidemics during the year, and the health of the people has been good. The general depression in the price of hemp and copra has been felt by the people here, but not to such an extent as in some other provinces. Torrijos (Marinduque) suffered from a heavy fire, but was given aid from the relief fund. Surra broke out in Boac, but was soon under control without much loss. The crops have been about the average, the rice crop in rice-producing sections being better than usual.

SPECIAL EVENTS.

The district has been free from uprisings during the year. Attempts in a small way were made in Samar in April and May, which will be taken up later.

Albay, Mindoro, and Sorsogon have been entirely free from anything of this nature.

Of special note in Albay was the capture of Guinaha and Ugas, as reported under peace conditions for Albay.

On the night of November 25, 1907, a severe earthquake occurred in Albay and Camarines provinces, totally destroying the church at Libon and causing the death of one of the inmates. The church at Polangui was damaged to such an extent that it can not be used, and at Oas one person was killed by the falling of the walls of a dwelling house.

The constabulary of Camarines had several engagements with Avila's and Vargas's bands during the year. Captures of the different leaders and guns have already been reported under peace conditions in Camarines.

From April 1 to 4 the interprovincial school meet was held at Neuva Caceres, represented by the provinces of Albay, Camarines, and Sorsogon, and the subprovince of Masbate, assisted by the Camarines constabulary and the second district constabulary band. The constabularly gave some exhibition drills and a sham battle with the Moros. Thousands of people came from different parts of the province to see the sports, etc., of the meet, and took the greatest interest in the proceedings.

During the Ragay campaign, while the constabulary was temporarily withdrawn from Nueva Caceres, a more or less loosely organized band of "rateros" took advantage of this absence to operate. This activity, which resulted in small robberies in several towns of the province, demonstrated the absolute inefficiency of the municipal police and terrorized the people. The provincial governor wired to Manila asking for two constabulary companies to be put under his immediate orders, and called on the councils in Nueva Caceres and other towns to organize volunteers to quell these disorders. The writer about this time was coming through overland from Nueva Caceres to Albay, and while at the town of Bato was awakened in the middle of the night by calls for help, by a ringing of the church bells, and by a multitude of armed citizens with bolos and clubs, which, on investigation, resulted in only a scare.

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Lieut. Mauro Arlegui, with a couple of men, was detailed by the writer to go to Nueva Caceres from Ragay to investigate this condition, and within a week he had captured over 30 of these rateros within the municipality of Nueva Caceres. This in the face of about 30 policemen, who had not only not captured a single individual, but apparently had made no effort to do so. This "ratero" disease spread over to the Laganoy district and several robberies were committed there. Lieutenant Arlegui was then sent on to Laganoy, and caused the capture there of the main body of "rateros" and recovered considerable stolen jewelry.

In Mindoro nothing of special note happened other than cited under peace conditions.

Up to the middle of March for several months past absolutely no information had been received regarding Otoy and his band. The undersigned, while in Catbalogan on March 19, was present when the teniente of the Barrio of Balangiga brought in a major and lieutenant of pulahanes, reporting that a captain of pulahanes had been killed while resisting capture at a baile, in one of the outlying barrios on the Balangiga River. These pulahan prisoners confessed that they were members of Otoy's band, and in January of that year had been present at a big meeting that Otoy had called on the Suribao River, where about 100 men, women, and children had been present. They had been ordered by Otoy to work the country south for recruits, assistance, information, food, etc. About the same time the presidente of Basay went out in the hills with all of the able-bodied men trying to run down a reported band of pulahanes 40 strong, under one of Otoy's majors. Considerable unrest was noticed in the towns. Balangiga asked for constabulary protection, and there seemed to be considerable uneasiness, mainly through the absolute ignorance of conditions in the interior and the lack of reports of Otoy and his whereabouts. The writer, after conference with the acting director in Manila, and with the latter's approval, brought into Samar four additional companies of constabulary, taking out one each from Tayabas, Camarines, Albay, and Masbate, and placing them on positions of outposts circling the region in which Otoy was supposed to dwell. From that time and up to the present the following has taken place:

Lieutenant Mann on April 27 engaged pulahanes on the Suribao River, wounding two men. About the same time the presidente of Oquenda discovered and captured Modesto Magampo and Anastacio de los Reyes. They were introducing a fanatical belief called "Nazarenong Gala." Jacinto de los Reyes's father-in-law lives at 478 Lemery street, Tondo, Manila.

On June 18 Lieutenant Sulse found Otoy's camp, killing Maj. Basilio Banigoos, Otoy's brother-in-law, wounding two pulahanes, capturing two Colt's revolvers, double action, caliber .45, and one Colt's single action, with twenty rounds of Krag ammunition, five rounds Springfield ammunition, bolos, spears, papers, stamps, and 45 pesos of Mexican currency. A few days later Capt. Claro Seda surrendered to a concejal at Dawa, where the Albay company is stationed under Lieutenant Sammons, and Captain McCloud about the same time raided a pulahan camp on the Hapira River, killing one pulahan and capturing the camp equipment, uniforms, etc., and Lieut. Dionicio Reves captured a Remington rifle. One of the most important captures in Samar about this time was made in the early part of June by Governor Cinco in capturing Maj. Ubaldo Diaz and Capt. Blas Amos, members of Otoy's band. Ubaldo Diaz had a great reputation as a pulahan fighter, and was one of Otoy's strongest supporters and close companions. He is supposed to have wounded Colonel Taylor, and a ₱500 reward had been offered for his capture.

Nothing of special note has happened in Sorsogon Province.

In Tayabas Province the principal capture was that of Parafino's camp, with his wife, papers, and revolvers, in 1907, at Monte Jobilojan, and the capture of Vargas in March by Lieutenant Bowles. The names of outlaws captured are given under the heading of peace conditions.

MUNICIPAL POLICE.

There is no visible improvement in the municipal police efficiency over last report.

The municipal police in too many instances are merely servants of the municipal officials of the various towns, and often relatives are given these appointments.

In Albay Province an examining board for noncommissioned officers was inaugurated by the senior inspector and has been in force for some time. The

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board consists of the senior inspector and two councilmen, and a better class of material is beginning to show itself on the Albay police force. With the exception of Guinobatan, whose police have twice been taken out of municipal control and placed in the hands of the senior inspector, and from reports coming from that town of lawlessness and insecurity of life it may be necessary to again place those of that town under constabulary control.

The police of Camarines are neither satisfactory nor efficient, but are about the poorest in the district. The senior inspector reports that on various occasions on inspection trips that he has made with the governor he has noticed a chief and sergeant being used as waiters.

In Mindoro they do only what the presidente orders and have absolutely no initiative. The police are so in name only, but are messengers, mail carriers, etc.

The force of Samar is in better condition than anywhere else in the district. They are well informed and give considerable aid in keeping the peace in their respective municipalities. Lieutenant Sulse was inspector before he was promoted lieutenant-governor. There are only two municipalities in Samar armed with revolvers, Dolores and Zumarraga. The arms in the hands of the police of the other municipalities have been taken up.

The force of Sorsogon Province have all been disarmed. In efficiency, etc., they have made no improvement over last year, except, probably, in the town of Sorsogon, where they are better paid than before.

The force of Boac and Atimonan, Tayabas Province, have a fair idea of their duties, but in the other towns they are ignorant and are generally regarded as servants of the municipal officials. In no place do they comply with Act No. 1733, although in some, since the senior inspector insists, they have bamboo ladders and water buckets as part of their equipment.

Not until the municipalities can afford to place experienced, educated, and honorable men as chiefs of police of each town and look upon this work as an honorable profession can they ever have an efficient police force.[a]

CONSTABULARY.

The relations of the constabulary, throughout the district, with the provincial and municipal officials are excellent. The discipline is good. It has been noted that very few summary court charges in the district have been had, in comparison with last year, which shows improvement generally among the men.

An assembly of such senior inspectors as could be spared at least once a year, for a conference with the district director on subjects pertaining to administration of affairs, should give good results.

Since the issue of the new carbines they have taken a great deal more interest in their work. It is thought, however, that a fixed rear sight instead of one which is movable would be better for native troops. Results obtained in gallery practice have shown the great superiority of the new arm over the old Springfield.

Transportation in the provinces is now satisfactory, except in Tayabas, where a light wagon should be furnished instead of the buckboard. It is recommended that in Calapan, Mindoro, where suitable public land can be bought for about ₱25 per hectare, barracks, storehouses, and a guardhouse be built. At the present time the buildings used are very small and unsatisfactory for constabulary purposes, and none other is to be had.

The writer is not in favor of the constabulary helmet, recommendations on which were requested in recent circular. He prefers the cap as now issued and the hat as now issued, only with a larger brim and a higher crown.

The laws should be so changed as to place the provincial jails under inspection of senior inspectors and of the provincial governor. At the present time jail guards seem to take little interest in their work, and have hardly a conception of their duties.

Instruction of the constabulary throughout the district, in view of the active campaigning done in the last year to break up the remnants of ladrone bands in Tayabas, Camarines, and Samar, is considered very good.

The writer believes that the district directors and their inspectors should be detailed as inspectors on equipment brought before an inspector, instead of district auditors, as is now the case.

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[a] A table showing the strength, equipment, and armament of the municipal police has been omitted and filed in the Bureau of Insular Affairs, War Department.

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The clothing, shoes, and equipment furnished have been very good. A change is recommended in the collar of the shirt, which has been taken up in a special report. The writer recommends that constabulary soldiers traveling on duty in parties of less than 5 be allowed a travel ration in cash of 60 cents a day Conant. Experience has shown that soldiers traveling overland or by boat can not ration themselves on ₱0.21 Conant a day. Soldiers traveling on coastguard cutters are obliged to pay ₱0.60 per day for their ration.

The wearing of the uniform at all times when not on leave should be enjoined on all officers and men. There seems in the past to have been some slackness in this regard. Except by special permission of district directors or superior authority, officers and men should wear uniforms at all times.

The senior inspector of Tayabas Province recommends that the section of Principe of Tayabas Province be taken away therefrom and attached to some other, because from four to six months in the year it is impossible to reach it, even by the *Antonio*, the mail boat from Atimonan, and the administration of affairs from Lucena is impracticable. The writer does not make any recommendation in this regard, as he is not aware if service could be reached in this section better from any other province outside of this district.

In 1906 the writer recommended to the provincial governor of Tayabas that the barrio of Unisan be separated from Pitogo and be made a separate municipality. It is cut off from Pitogo in certain seasons of the year, has sufficient resources to maintain a municipal government of its own, and also sufficient material for officials. A post-office should be established there. The writer renews this recommendation. Better mail facilities should also be furnished from Lucena, Tayabas Province, to the towns south—Unisan, Pitogo, Catanauan, Mulanay—and to Guinayangan, at the head of the Ragay Gulf. It takes two weeks to reach these points by mail, except Catanauan, and there is no telephone communication with any of the towns.

The enlisted strength of the companies is kept up to its full quota, and very good material is easily gotten to replace those whose terms expire. At the present writing no vacancies in the enlisted strength exist.

The condition of the command throughout the district has been very good on the whole, and the additional force of enlisted men in the medical corps now to be furnished is just what was needed to make this department complete.

Respectfully submitted.

PETER BORSETH,
District Director.

The EXECUTIVE INSPECTOR, BUREAU OF CONSTABULARY,
Manila, P. I.

REPORT OF THE DISTRICT DIRECTOR, THIRD DISTRICT.

THIRD CONSTABULARY DISTRICT,
OFFICE OF DISTRICT DIRECTOR,
Iloilo, P. I., July 25, 1908.

SIR: I have the honor to submit the following annual report for the third constabulary district for the fiscal year ended June 30, 1908:

The provinces included in the district are:

Name.	Area.	Civilized.	Wild tribes.	Total.
Antique	1,134	131,245	2,931	134,176
Bohol	1,511	269,223	.....	269,223
Capiz	2,322	277,940	5,629	283,569
Romblon	573	52,848	.....	52,848
Cebu	1,989	658,727	.....	658,727
Iloilo	2,027	403,932	6,383	410,315
Leyte	3,008	388,922	.....	388,922
Negros Occidental	3,130	303,660	4,642	308,302
Negros Oriental	1,864	184,689	16,605	201,294
Total	17,508	2,666,186	36,190	2,702,376

During the year the former province of Romblon was merged into Capiz as a subprovince.

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DISTRIBUTION OF THE CONSTABULARY.

The constabulary force allowed the district is distributed as follows:

	Men.
General service companies (3)	135
Band	30
Antique	80
Bohol	11
Capiz	90
Cebu	184
Iloilo	184
Leyte	152
Negros Occidental	147
Negros Oriental	45
Staff sergeants	16
Total	1,074

The force is fairly adequate to the needs of the district, though a number of places could be named where it would be desirable to place stations were it practicable, especially in the mountain districts of several of the provinces.

MILITARY GARRISONS—SCOUTS.

There are five garrisons of American troops within the limits of this district, containing two regiments of infantry. A regiment is at Guimaras Island, except the two companies in Iloilo city, and one regiment is divided between Cebu city, Ormoc, and Tacloban, the last two places being in Leyte. There are six companies of Philippine scouts in the district, three in Leyte, and three in Cebu.

SPECIAL EVENTS—PEACE CONDITIONS.

Antique.—This province has been free from any disturbances during the year and the crimes committed have been relatively few. The people, generally speaking, are very quiet and peaceably inclined, but are exposed to attacks from bands of ladrones that sometimes come down from the high mountains between Capiz, Iloilo, and Antique or cross over these mountains from Capiz or Iloilo for purposes of plunder. There have been no such assaults during the year and the relations between the village authorities in Antique and the mountain people have been, it is thought, much improved. The patrols of constabulary and police have been so steadily on the go that the formation of small bands of prowlers from local bad characters has been difficult, and when formed they have usually dispersed without doing damage.

The relations between the mountain and the village people being better, the former hesitate less in visiting barrios and villages, and quite a trade is carried on, which in itself assists in improving matters.

Bohol.—Bohol remains very quiet, as has been the case for years in this island, whose inhabitants are industrious and peaceable.

No constabulary had been in Bohol for a couple of years, but it became necessary to send an officer to assist in the inspection of the municipal police and to look after the arms thereof and of those held by private persons. A small detachment, not to exceed 10 men, has been allotted to the island. There are no outlaw bands known to exist in Bohol and peace conditions are good.

Capiz.—This province remained quiet during the year, although a number of robberies of carabaos and several murders occurred. There is a montesco named Si-arong living in the hills above Tapaz, who is said to have a Remington rifle, reported as unserviceable, that enables him to gather a few persons together for petty stealing.

Two carabao thieves escaped from jail at Capiz several months ago (Domingo Depetillo and Pascual N) and are still at large. They have gathered a few men and roam along the southeast of the province. They are said to have one muzzle-loading rifle and one revolver.

The relations between the wild mountaineers and the village people have improved somewhat and efforts are being made to prevent the orderly mountaineers from being afraid to come to the markets.

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Cebu.—Conditions throughout the island of Cebu have been good during the year. There is no organized outlawry in the province, although a few old subleaders are still at large either in hiding or living quietly among the hill people without arms or followers. Eugenio Alcachufas is said to have one revolver and to have several followers in the mountains of Alaguinsan. The patrols of the constabulary penetrate the mountains to prevent the formation of ladrone bands and to exert influence over the people, advising them on matters of law and order and taking an interest in their affairs. There are no so-called "montescos" in Cebu, all, even the simple people, living in the mountains being Christianized inhabitants. They market their produce and buy a few necessities in the towns. There is sometimes jealousy and hard feeling between these hill people and the town people on the coast, and the former when excited by the spell of some fakir have in past years attacked some of the towns. The hill people are ignorant, suspicious, and easily excited.

Iloilo.—Peace conditions are not altogether satisfactory, as there remain in the mountains of Iloilo two or three ladrone bands with arms.

These bands have been quiet during the year, the principal trouble having been in the lowlands in the shape of carabao stealing, during the dry season, by thieves who, it is said, live in the villages or barrios.

The ladrone bands are that of Sano and Oto, with 10 arms and about 20 followers, in the hills to the northwest of Janiuay, and that of Toribio, to the west of Maasin, with about 8 rifles and 20 followers.

Higher up in the mountains are the chiefs of the wild tribes, Berdin and Santo, who live some distance to the northwest of Lambunao, and Bernandino, who lives near Alibunan, to the north of Lambunao. These chiefs have influence over all of the wild tribes that inhabit the central mountain range. Efforts have been made, with some success, to improve the relations between the mountain tribes and the people of the lower lands and to induce the former to come down, establish markets, and trade without fear of molestation so long as they conduct themselves well.

The assassination of Governor Benito Lopez, in his office, in December, was an outcome, no doubt, of political feuds, and while there was intense feeling at the time, no disturbance of the peace took place.

Leyte.—Leyte has remained quiet during the year, and there are no outlaw organizations in the province. The remaining pulahan subchief, Idos, surrendered in October last. He was the last of the pulahanes of any influence. The central portion of Leyte, which was much disturbed by the outbreak of 1906–7, has been constantly patrolled during the year and the people have gone to work at their usual occupations, although the fall in the price of hemp has made it difficult for many. In the north end of Leyte carabao stealing developed as a natural outcome of the disturbances of past years, but the activity of the constabulary patrols in capturing the stolen animals and restoring them to their owners has put it down, and the province, as a whole, seems very free from crime. There are no wild tribes in Leyte, although the ignorant people who live in the barrios and hemp fields are suspicious and could be easily excited against the town people by religious fakirs or by unjust treatment on the part of village authorities.

In addition to the three constabulary companies allotted to Leyte, there are three companies of Philippine scouts stationed on the east coast of the island, whose presence is useful in restoring confidence and quiet.

Negros Occidental.—There have been no serious disturbances during the year and there are no outlaw bands at large. "Papa" Isio and his followers, who had terrorized this province and the neighboring one of Negros Oriental for many years, surrendered to the senior inspector through the presidente of Isabela at Isabela on August 6, 1907. This band had been persecuted by the constabulary for years, and lived in the dense forests in the mountain ranges in the center of the island. The census gives more than 20,000 as the population of the wild tribes inhabiting the mountain ranges of Negros. The country and the people are little known, and the latter are made up of Negritos, montescos, or wild people of the Filipino type, and on the south coast of some admixture of Moro blood. Efforts have been made by the provincial and constabulary authorities to gain the confidence of these people, and missionaries also have begun work among them.

An active band of carabao thieves, that operated in the north end of the province, was broken up by the capture, in October, of the leader, Santiago, who was later sentenced to imprisonment. This band robbed the inmates of a house near Cadiz of money and clothing on July 21, 1907, and committed

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several minor robberies in August. On September 8 they burned a house in a barrio of Talisay and on August 24 robbed the store of a Chino near Sagay.

Negros Oriental.—There has been quiet and peace during the year and no outlaw bands are at large. Eugenio Alcachufas, one of Isio's former followers, who lives in Cebu, is said to have come through this province and to have visited the mountains in the central part of the island of Negros, but he is believed to have his principal hiding place in the Cebu Mountains, as he is a native of that province.

The sad murder of two Americans, Mr. Everett, of the forestry bureau, and Mr. Wakely, a teacher, with two Filipino assistants, took place in the mountains of the southern part of this province about May 8 to 10 last. These gentlemen left Cabancalan about a month before the above date and went overland to Bais, then from Bais they went overland to Tolon, and a few days after leaving Tolon, with the intention to go overland to Cabancalan, they were killed, evidently by treachery on the part of their guides and bearers, who were from the hill tribes above Tolon and who are said to have murdered the unfortunate travelers while sleeping. It was not known until information was received that the party was overdue and supposed to be lost that such a trip was contemplated, or they would have been given a suitable escort. They did not deem an escort necessary, apparently, as Mr. Everett was much accustomed in his work as a forester to visit the forests and to meet the inhabitants. The wild people in the hills on the south slope of the Negros Mountains are supposed to have some Moro blood and to be more inclined to treachery and deception than those farther north.

The assassins have not yet been captured, but they will be pursued and run down in time by the constabulary and brought to justice. Their hiding place has not yet been located in the mountains.

RELIGIOUS AND POLITICAL CONDITIONS.

Notwithstanding the fact that the decisions of the Supreme Court rendered during the early part of the present calendar year restored to the Catholic Church authorities the churches and convents that had been occupied in some of the towns in Antique and Negros by the municipal authorities, and in others by the Aglipayans, no serious disturbances took place over the transfer of the property. This indicates a continuance of the better feeling that has been apparent between the Filipinos who differ in religious ideas.

The only serious disturbance during the year due to religious feeling took place in one of the towns in the south of Cebu on December 15, 1907, between the Protestants and the Catholics, in which one of the Protestants was killed. The assailants were arrested and committed to prison.

A fakir, representing himself to the people as José Rizal, attempted to organize the "Colorum" cult among the ignorant people in some of the barrios in north Cebu, but was run out of town by the village presidente, and left the island.

Two general elections took place during the year, one for members of the Philippine Assembly, on June 30, 1907, and the other for governor and third member, in November, 1907.

The latter brought out a heavier vote and aroused more interest, partly no doubt because the election for the Assembly was something new to the people.

Though the rivalry was keen between candidates, there were no disturbances at the polls, the many contests and questions arising being taken into the courts later by the parties concerned.

The assassination of Governor Benito Lopez, of Iloilo Province, on December 27, 1907, soon after his reelection, was in some degree the outcome of political rivalry engendered at the election or during the campaign, and several election inspectors in the town of Calivo, in Capiz Province, were sentenced for infractions of the election laws.

In the city of Cebu the election of a man who was under sentence of a court, and who was therefore ineligible, produced much friction for some time, but no violence. The disqualication of the elected presidente and his flight to Hongkong, followed by the suspension of the councilors and the appointment of others, has improved matters very materially.

MUNICIPAL POLICE.

The senior inspectors have worked earnestly during the year, and with some success, in assisting the provincial and municipal authorities to improve the condition of the municipal police. In Cebu a constabulary officer has worked

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with the governor on special duty to assist in their instruction. His work has met with much success in the city of Cebu, where the number of robberies by sneak thieves has been greatly reduced and several bands of sneak thieves have been sent to jail or broken up. A constabulary officer has recently been detailed to duty to assist the governors of Iloilo and Capiz provinces with the municipal police. Article 26 of the Municipal Code is still a drawback, in that it requires the terms of enlistment of all police to expire when the term of the presidente expires. The law should be amended, it is thought, to except the police from the operation of this paragraph, allowing them to be enlisted for periods of two years.

The police being under the control of the several municipal presidentes and councils, and the provincial governor having himself little direct control over them under the laws, continue to vary in efficiency according to local conditions. It is believed that to secure greater efficiency and to reduce the great cost of the police to the municipalities, the law should be amended so as to give the provincial governor, assisted by the senior inspector, more control over the appointment and discharge of the police.

Efforts have been made to get the police to assist the constabulary patrols by sending one or two to join the patrol and to aid the constabulary by their greater local knowledge of the trails and the people. Many municipal presidentes takes an interest in this, which also adds to the good relations between the police and constabulary.

WILD TRIBES.

Constant efforts, with some success in places, have been made to improve the relations between the mountain tribes of Panay and Negros and the constabulary and village authorities. No great progress can be made until 2 or 3 constabulary stations have been located in the interior of these islands so that the hill people can be controlled and their relations with others supervised.

CONSTABULARY ORGANIZATION AND EQUIPMENT.

With the completion during the year of the arming of the constabulary with the Krag-Jörgensen carbine, equipped with bayonet, all companies took a new interest in instruction, and much improvement is manifest, notwithstanding the amount of work done in patrols which has been steady and constant.

All companies completed a course in target practice after a thorough period of training in the preliminary exercises.

CONCLUSION.

With the quiet condition of the Visayas and the improvement in the roads that is being made as a result of the passage of the double cedula in the province, and the establishment of the caminero system to maintain the roads, and with the construction of the railways, now completed in Cebu and well under way in Panay, agriculture should improve markedly.

The steady improvement in the character of the supplies, in the payment of the men, and in the supply department in general is noted.

Several recommendations concerning details of the constabulary organization will be separately transmitted for the consideration of the director.

Harmony has existed between the constabulary and the provincial and municipal authorities, and the relations between the constabulary and the people also are excellent.

The officers of the constabulary, with very few exceptions that have been noted from time to time, have performed hard and continuous work of a difficult and delicate nature and are entitled to much commendation.[a]

Very respectfully,

W. C. RIVERS,
District Director.

The EXECUTIVE INSPECTOR, BUREAU OF CONSTABULARY,
Manila, P. I.

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[a] The following tabular statements have been omitted from this report and filed in the Bureau of Insular Affairs, War Department: Number of arms captured, animals recovered, engagements, constabulary and outlaws killed and wounded, by provinces; strength, pay, and armament of municipal police.

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REPORT OF THE DISTRICT DIRECTOR, FOURTH DISTRICT.

FOURTH CONSTABULARY DISTRICT,
OFFICE OF THE DISTRICT DIRECTOR,
Vigan, Ilocos Sur, July 10, 1908.

SIR: I have the honor to submit herewith a report for this constabulary district for the fiscal year ended June 30, 1908:

THE EXTENT OF THE DISTRICT.

The district consists of the provinces of La Union, Ilocos Sur-Abra, Ilocos Norte, Cagayan, Isabela, and Lepanto-Bontoc. Within the jurisdiction of Cagayan is the subprovince of Apayao, which embraces the central mountain region in the extreme northern section of the island of Luzon. This subprovince is intended to include all the settlements of the wild or non-Christian tribes, whose governmental functions were formerly exercised directly from the provincial capital of Tuguegarao. The capital of the subprovince is at Tauit, there being stationed there a lieutenant-governor. Immediately south of Apayao are the various subprovinces which constitute the province of Lepanto-Bontoc. They are Kalinga, Bontoc, Lepanto, and Amburayan, and with the exception of Lepanto each is presided over by a lieutenant-governor. Lepanto is administered directly by the governor of the province, whose offices are at Cervantes, the provincial capital. This province is very extensive and its boundary lines gerrymander within its control all wild tribes (commonly referred to as non-Christian) which inhabit the mountains adjacent to the original provinces of Lepanto and Bontoc, and which have not been specifically included in any other non-Christian governments. Lepanto-Bontoc has a seaport at Tagudin, on the west coast, from whence its territory runs to the east, spreading out to the right and left until it comes to within a very few hours' ride of the great Cagayan River. The extent of the district at present is 15,681 square miles, constituting 13 per cent of the area of the entire Philippine Islands. Two of its provinces, Cagayan and Isabela, have over 5,000 square miles each, making them almost as large as Samar, Panay, or Negros. The total population of the district is 861,525, or 11 per cent of that of the archipelago, but there are in this jurisdiction at the present time 20 per cent of all the wild tribes. When Nueva Vizcaya is added to this district, we will have to keep in control 27.4 per cent of all the wild tribes of the islands and constituting the most blood-thirsty and savage.

COMMUNICATION.

There are only two protected harbors, one at San Fernando and the other at Aparri. When the weather is favorable, steamers stop at Vigan and at Curimao, the port of Laoag. Salomague is the storm port for Vigan, but both Curimao and Salomague are 20 miles from the towns which should be classed as interior cities rather than ports. Weekly steamers come from Manila. The capital of Cagayan can be reached by weekly launch from the port of Aparri, but from Tuguegarao, Ilagan must be made by horse or by the slow, river canoes. The latter place is quite isolated. A good dry-weather wagon road extends along the west coast through the provinces of La Union, Ilocos Sur, and Ilocos Norte. Good horse trails extend to distant points in all provinces and new ones are constantly being opened up. The Manila-Dagupan Railway is almost completed to the town of Agoo, in La Union, and may be finished to San Fernando before the close of the year.

PEACE CONDITIONS.

There are at present no bands of organized outlaws in the district. In referring to the Christian sections this will usually be accepted as a statement tantamount to a declaration of almost absolute peace and good order. This is quite true, and well-organized municipal police with efficient and honest officials should easily control the situation within their own jurisdiction. Nevertheless, we are maintaining five companies of constabulary for the purpose of aiding the municipal and provincial authorities in municipal police work and for the additional purpose of insuring in each province an armed reserve to

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meet any eventualities which the weakness of the police would make them unable to cope with, such as raids by wild tribes, riot, or insurrection.

Head-hunting by the wild tribes and carabao stealing by both the wild tribes and the Christianized people are the only public crimes of any moment. Cases of homicide appear to be more frequent than in former days, but these are usually easily handled by the police. They are usually the outcome of gambling and petty quarrels.

A few murders have been committed, particularly in Isabela, which are attributed directly to a peculiar religious belief of a sect called "sibrong." It is said that when a dying person is seen to extend one, two, or three fingers it is obligatory upon his relatives to kill that number of people. This is being made the subject of special investigation.

The constabulary of this district has two classes of work—that among the Christian settlements and that among the non-Christian. The Christian section is confined to a 5-mile strip of land along the entire coast line and on either side of the Cagayan River for its entire length.

In the Christian section there are no organized bands of robbers, and but few lawless characters. The Ilocano is of a law-abiding and peaceful disposition, and looks upon the constabulary as a force necessary, in addition to the municipal police, to give him protection from the raids of the wild tribes. The work is confined to patrolling for the prevention of carabao stealing, aiding the provincial governors in the management of the police, and in investigating unusual offenses which the police are not so well adapted for handling.

Carabao stealing is really of small moment, and the number of animals lost during the year has not been commensurate with the price of vigilance and subsequent prosecution. Animals appear to be plentiful, and during the dry season, when there is no work for them and grazing is poor, are turned loose by their owners to roam about at will in search of food. It is at this time of the year also when the people are little occupied and some find it difficult to make a living. In consequence carabaos are found missing from time to time, and it is generally conceded that in the large majority of cases the animals are stolen for food. In several instances carabaos reported stolen were found to have strayed only. My predecessor perfected a system of patrols throughout the Christian provinces in conjunction with the municipal police, and it seems to be greatly appreciated by local officials, as they say the people recognize the presence of patrols, which operates to discourage stealing and gives a greater feeling of security.

In all provinces except La Union the force is clearly inadequate to afford the necessary protection to those Christian settlements lying adjacent to the mountain tribes.

In the non-Christian section we have six companies, a total of 240 men, and in the immediate vicinity of our stations we are enabled to control, to a considerable degree, the fighting and head-taking propensities of the wild man, Igorot, Kalinga, or of whatever tribe he may be. There are many sections which have never been subordinated to the influence of a constabulary restraining force, and the people continue to wage war upon each other, to sneak down into the lowlands to waylay some unwary Christian and take home his head with the same exultation as did our own Indians in the scalping days. These people and the conditions which they create remind one very forcibly of the tales our elders in the States used to tell us of the frontier life in the West. These wild tribes are warriors pure and simple, and their thirst for the blood of the native Christian and for their tribal enemies is as strong as was the thirst of the American Indian for the blood of the paleface. They do not make war nor send out raiding parties for the purpose of robbery nor to make their tribe the dominant one. Their sole purpose is to take heads as our Indians would take scalps, and the head of the old or young, the sick or infirm, is nevertheless a head. The great feast which follows the return of the successful war party finds its warriors bedecked in feathers and paint. Native drink is brought forth, hogs are killed, the dancing with shield and spear, and the drinking goes on far into the night or until all the warriors fall from their efforts. As with our Indians, their dance and song is a recital of their deeds, the old men participating and telling how they did it in the good old days, taunting the young men with tales of great valor. The women, too, join in and dance and chide the young men with lacking in the spirit of the former days, encouraging them to go and show their mettle.

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Among those who live contiguous to the constabulary stations the same spirit, although restrained, is still manifest, and hostile demonstrations are not infrequent, making the life of our officers and men one of constant vigilance and demanding the greatest of self-control and courage.

To overcome the propensity to make raids on the Christian settlements and to take Christian heads it is quite essential that our officers should endeavor to prevent war between tribes and thus cause head-taking to go out of practice. Courage and good judgment are necessary, and the work demands the very best officers in the service. Peace powwows are frequently held, with constabulary officers presiding. Each tribe presents its advocates, who chide each other with being women and cowards, and boasts are made of the number of heads taken. Threats are freely exchanged, and in many instances it seems as though the peace conferences would end in an open fight. Peace pacts are not overly binding, but are seldom broken without due notice.

These people are artists in the use of water in irrigation, and I have not seen in Japan any finer examples of irrigation for the growing of rice than are to be found in the jurisdiction of the province of Lepanto-Bontoc. A great deal of labor is expended in the building of high retaining walls, in order to create a small spot for the planting of rice. Their women do most of the work, but not because the men are not industrious. You will find the men with spear and ax (the latter resembling a tomahawk) perched on vantage points, acting as guards to those at work, or they will be in the forests gathering firewood and other things. They also help in the fields and in the work on the retaining walls. On road work they are excellent and usually willing workers.

The work of the constabulary in the stations among these wild people is to break up their hostilities to each other and to prevent them from raiding the Christian settlements. The first is difficult; the latter has been more successful. There are, however, many sections in which there are no constabulary and the people continue to prey upon those of the lowlands. These sections are the ones which should receive the attention of the government, and sufficient constabulary should be made available. The Christian provinces pay the taxes, but it should be for the support of constabulary in such localities as will control those who molest the Christians. Thousands of constabulary located in border towns, for defensive purposes merely, would accomplish but little, for the practice of war parties is to work by stealth, and after having committed some depredations to sneak back to their mountain fastnesses. They can not be identified, for no one sees them if he hears of their coming first. The constabulary must be located with a view to offensive operations, which does not necessarily mean warring with these people, but of demanding submission first, and, if declined, war as a substitute.

At the present time the borders of Ilocos Norte and the great prairies of the Cagayan River are the scenes of murderous deeds by the Kalingas, Gaddangs, and Apayaos. Full reports of all these deeds are not at hand, because of the difficulty in obtaining them, but the briefer facts as related are to me truly alarming. During the past year Apayaos invaded Ilocos Norte on three occasions, taking 1 head. They took 2 heads from Claveria, 4 from Lapu, and 4 from Mallabu. The Igorots took 5 from Aamyao, Kalingas 4 from Addang and 3 from Liang. From Isabela 9 murders are reported, most of them supposed to have been committed by Kalingas. The latter took the head of the bandmaster of Enrile while he was out hunting. Falangao took 3 heads from Mayayao and the latter 1 from Falangao. Cadaclan and Barlig exchanged a head and Mayayao lost a head to the Gaddangs. Several murders have been committed in Abra, but they are yet to be proved as properly charged to the wild tribes. Tuao, in Cagayan, was entered by Kalingas and an old woman and a child were killed. Two fresh heads were seen in Abfuao. Many cases are never reported, and in many instances rancherias will not report the loss of a head, but wait an opportunity to get even. Here, then, are 44 heads that are known to have been lost during the year, and as a tribe never forgets a loss they will serve as bones of contention for years to come. Some rancherias still refuse to make peace, because they lost heads back in the Spanish times, ten years ago.

The decline of head-hunting and raids on Christian settlements is dependent entirely upon the increase in constabulary stations.

At the present time Cagayan Valley, with its 10,000 square miles, is the most exposed and has but 120 constabulary for its protection. Members of the wild tribes are at liberty to go down among the Christian settlements, usually leaving their weapons at a constabulary station or hidden along the trails; but the people are constantly suspicious of them and in fear of some act of treachery,

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for the wild man always strikes at the back. Where we have garrisons we require all those who wish to go into the lowlands to obtain passes, and in case any overt acts are committed the guilty parties are identified. This method in itself works well as a guaranty to the lowland people, and the wild tribes are becoming quite fond of the opportunity for trading.

As heretofore mentioned, this district has 20 per cent of the wild tribes of the islands to control, but with only 11 per cent of the force of the constabulary. The Christians of the islands are now comparatively quiet, there being scarcely any armed bands of carabao thieves, robbers, pulahanes, or insurrectos. With such a change in the conditions in the Christian provinces, it would appear reasonable to suggest that the government can well afford to extend its influence to those who as yet do not know nor understand what government is or means. and by so doing to insure the lives of those Christians who are on the frontier and are endeavoring to open up new land or take up homesteads under the recent law. For ordinary cases of municipal crime it would seem that Christian provinces should at this time be able to maintain public order through their lawful officials, and to allow the constabulary to continue to perform its semimilitary duties of keeping in control those lawless sections which the municipal and provincial authorities can not, because of inadequate means or force. It has been the custom of district directors to increase or decrease the force in any province in order to adjust it to meet changed conditions, and it is recommended a redistribution of the constabulary be made that those districts now provided with a strength entirely too small to meet the demands be allowed an increase.

This district should have at the present time an increase of 4 companies. One is needed in the subprovince of Abra, which has always been subject to molestation from both the Bontocs and the Apayaos, as well as local non-Christians. The additional company would find most of its work to the north of Bangued, would gradually push its influence back into the mountains of Apayao, and would cooperate with the constabulary of that section. The second company would find its work in the extreme northern section of Ilocos Norte and along the northern frontier, working gradually toward the Apayao center. The Apayaos are the wildest and the most inaccessible of all the tribes. The third company would be stationed in the Piat section of Cagayan and work to the west. The fourth company would have a wide range of work out from Ilagan, and although most of this work would be confined to the dry season, still it would accomplish much in the long stretch from Mayayao north to the Chico River. I make no mention of the great territory to the east of the Cagayan River, but speak only of those parts which seem to demand immediate attention.

The establishment of these additional stations means considerable expense, for the distances are great, transportation scarce or expensive, and the points quite inaccessible. Another point, not dwelt upon, is that these places are not much sought after by officers or men, as the life is a lonesome one and sickness is usually quite severe. Nevertheless the work must be done, and every year that is lost makes it just that much harder to get the necessary control over the wild men.

POLITICAL CONDITIONS.

Reports from all provinces indicate that the interest in the elections of the past year, by the people at large, was not great. The ruling class in every community fought out the political battles on personal grounds, appealing where necessary to the passions of the lower classes in order to obtain the votes. Contested elections were quite numerous, the feeling being so bitter the defeated ones left no stone unturned to win the offices sought. The people do not seem to be greatly enthusiastic over political matters, apparently being content to leave those problems to those who seek office.

RELIGIOUS CONDITIONS.

Religion is no longer of any political importance. The people of Ilocos Norte, who were almost solidly Aglipayanos, turned over all church property to the Romanists in accordance with the mandates of the Supreme Court, and did it in a creditable, orderly manner. It will of course take a little time for the old sores to heal. Señor Aglipay, who was the recognized head of the movement which bore his name, has turned his attention to the "Guardia de Honor," a religious sect among the so-called "Nuevos Christianos." These people are to be

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found in the mountains back of Narvacan, Ilocos Sur, and the province of Lepanto. They are all Igorots or Tinguians, with a sprinkling of Ilocanos, who have lived for years among the less civilized people. They appear to know about as much of Christ and the religious chants and ceremonies of the church as did the pulahan element in the southern islands, but are quite lacking in the same desire to create beliefs that they are to kill and rob their fellow-being, as do the pulahanes. They are barbarians baptized and nothing more. There are missionaries of various denominations among these wild people, and their measure of success seems to be based upon the number of baptisms. Talks with many of the people have elicited the information that while they can not understand all the strange things that are told them, still, as they are told it is all for their good and benefit, they are not unwilling to try it. Some argue that as all Spanairds, Americans, and the rich Filipinos have been baptized and have lots of wealth, there must be some good in it. There are several Episcopal and Roman missionaries who are establishing schools and doing splendid practical work in uplifting the people.

ECONOMIC CONDITIONS.

The tobacco crop in the Cagayan Valley promises well. For two years past it has been very poor. Recent laws requiring more care in its preparation for the market will probably result in obtaining better prices. Maguey is the second product of importance in the district, but owing to the very low prices during the past few months it has not been a source of much profit to the many people who were becoming quite dependent upon it. The growing of hemp and rubber is being tried in Cagayan. The rice crop in the Ilocano provinces was very poor, necessitating the planting of corn and camotes. The wild tribes subsist almost entirely upon rice and camotes, the rice grown by them being the finest in the Philippine Islands. They also grow Irish potatoes, string beans, and onions for their own consumption. The increase in the number of constabulary stations in the mountain regions is always followed by the opening up to a small degree of those fertile sections where rainfall is more abundant, and the people who move into them are those who have no property in the lowlands or who are unable to make a good living with what they have. There are thousands of acres of such land on both slopes of the central mountain chain; and although the wild tribes resent, to some extent, the movement in their direction, still it seems to be the proper solution of the conditions of overpopulation of the Ilocano provinces. The wild tribes are very industrious, but withal seem to be compelled to guard their rice supply with considerable care, for the reason that so much labor is required to build up their rice fields that they are hardly able to keep pace with the growth in population, the destruction by storms, and the occasional poor crop.

Rinderpest has been reported for several months past from Isabela Province, coming from Nueva Vizcaya. A hoof disease was reported in the town of Santa, Ilocos Sur, during June. Cholera was reported during June to be quite bad in several towns between Dagupan and Vigan.

The use of opium is being made the subject of special investigation throughout the district. In this the local authorities are giving particular attention to the orders of the governor-general.

MUNICIPAL POLICE.

The police of the following provinces are, by order of the governor-general, under the control of the constabulary: Cagayan, Isabela, La Union, and Ilocos Sur. In them the police are more efficient, and the work of the senior inspectors seems to be appreciated by not only the governors, but by many of the presidentes as well. The fact that the police have a common head inspires the feeling that they belong to an organization of considerable magnitude. The frequent inspections by an officer having authority over them and having much experience in the work not only serves to raise them to a higher standard, but to maintain them there. If the appointment of the police could be made to lie with the senior inspector it would remove them entirely from the influence of the local political strife, so common in the provinces. The use of insular or provincial funds for the maintenance of police in municipalities having depleted treasuries would seem to deserve more consideration.

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THE CONSTABULARY.

The relations of the constabulary with the provincial and municipal authorities have continued to be the best, and the cooperation is all that can be expected.

The constabulary occupies permanent barracks, the property of the government, in Ilagan, Bangued, Bontoc, and Laoag. It occupies its own barracks, buildings made of light material, in Mayayao, Tauit, Balbalasan, Lubuagan, Cadaclan, Tabuc, and Cervantes. Officers' quarters, made of light material, are owned in Mayayao, Tauit, Balbalasan, Lubuagan, Tabuc, and Cadaclan.

In the majority of constabulary stations wooden bunks with bejuco bottoms are being substituted for cots. The woodwork is being done by expert carpenters, while the bottoms are put in by the enlisted men. These bunks are 6½ feet long by 27 inches wide, and the uniform cost is ₱5.50, which is met from mess savings. These bunks are far superior to the cots, and the cost for repairs will be practically nothing, as every man can keep his own in repair with a little bejuco.

The clothing allowance is considered ample in provinces where the work is not excessively hard. The sale of clothing is, however, worthy of more attention by senior inspectors and inspecting officers, for the variance in the administrations in this line is considerable, and there is evidence of a careless disregard of the welfare of the men. Other things being equal, one will find a considerable overissue in one company and underissue in another.

The constabulary of the district is now armed with the Krag carbine and bayonet. The target season has not yet closed, but all companies will have finished by the last of July. It is recommended that the allowance of ammunition for target practice be doubled, as the present allowance is scarcely sufficient for what would properly be termed "preliminary work."

Recruits are especially instructed in the use of the carbine that they may fire their first year's allowance at the end of sixty days' service. For such recruits as have been properly instructed this rule has proved very beneficial, the recruits averaging better than men longer in the service. It also develops any defects in a man's make-up and allows of his early discharge if he is found unable to properly handle his weapon. Another feature of the carbine instruction is the rapid fire. This has not been along the lines laid down in army practice, for, in the work of the constabulary, rapid fire is only of use in extremely short ranges and must of necessity be very much more rapid than is required for the army in its battle exercises. The range, too, is such as would be used in constabulary work. At the 10-inch bull's-eye our officers and men have made scores ranging from 20 to 25 out of a possible 25, the range being 50 yards and the time limit five shots in ten seconds. In actual combat against bolomen at close range a man should be able to fire five shots in seven seconds. When a man is armed with a magazine gun he should be trained to get the maximum speed out of it, as, at close range against bolos and spears in the hands of overwhelming numbers, time and speed count for everything.

A change in the uniform regulations is recommended to permit the use of a "fatigue blouse," which would be more suitable to the tropical climate and to the work of its wearers. The khaki cap should be discarded and the helmet adopted in its place. The white cap with the white uniform is thought best for purposes of dress. The officer's blouse, with its high, stiff collar, is unquestionably the neatest and most dressy pattern that could be devised. If our officers could lie about in negligee and only be required to don the blouse for a few minutes each day, and then only for the purpose of standing at retreat or some other formal function requiring no exertion, it could not be denied but that it was the proper blouse for the Tropics. It is not uncomfortable for a stroll down the shady side of the street, but when a station officer has to rustle about in his daily duties, then go into his office and do a lot of purely clerical work, then out again to an hour's drill, etc., he is very visibly impressed with the fact that he is anything but comfortable in his high collar. These are not necessarily uncomfortable where one does not have to rustle about in the hot sun, but for the majority of constabulary officers who work as they should it has impressed me very vividly as quite unsuited to the service. I would not recommend a change in the enlisted men's blouse, as it is used only for guard duty and formations, none of which require especial exertion, and when off duty the men may remove their blouses inside the barracks. For drill they use the flannel shirt. I would recommend that the officers be permitted to wear a blouse with an open collar, standing or roll white collar, white shirt, and white four-in-hand tie. Such a

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blouse could be designated as "officers' fatigue" and could be worn on all but formal occasions. Within the confines of my own home I have, on warm nights, worn such a blouse and can testify to its superiority in comfort over the present one. For office work I think it would be ideal, and there would be no occasion for an officer to seek a back office, where he could remove his blouse in order to work freely and without loss of energy, vitality, and good humor. For officers traveling about their provinces on horse or in wagons the fatigue blouse would be very comfortable. The present high-collar blouse could be designated for use in Manila and on formal occasions.

At present the force of this district consists of 11 companies, having a total of 506 men. Three new stations, Tauit, Tabuc, and Cadaclan, were established during the year. This move necessitated reductions in Christian sections, but the control gained over the mountain people has more than overcome any possible disadvantage to the lowlands. It has gone a long way to prevent depredations into Christian sections. Tabuc was ordered abandoned in June, temporarily, for the reason that the entire force, including the officer and the lieutenant-governor, had been almost continuously sick with fever for three months. The Spaniards found this locality fever infested, and even few natives live there. It is quite likely the station will be consolidated with Lubuagan or placed at Nanong. Tauit was very unhealthy at first, but a change of barracks to higher ground made a great improvement. The stations are all hard to supply, as but little is to be obtained from the surrounding country. Men will not reenlist for service in them, and the loneliness, hardship, and sickness tell on the officers. But these stations must be maintained and every effort exerted to make them habitable. I must commend those officers who are now in isolated stations for their fortitude and faithful service.

It is believed that the subject of constabulary discipline should be taken up and considered in the light of the experience of the past five years. We are still operating under a summary court law modeled after the system of discipline in vogue in the United States Army. The result of this is that our service is in reality army service, the conduct of the men being absolutely subject to the whims of the company commander. The success or failure of an enlisted man is too much dependent upon one officer.

I have made it a point to keep the records of noncommissioned officers, and have been very much surprised to note the great variance in the estimates placed on the services of one man by the several officers. One officer will say a noncommissioned officer is absolutely worthless, while against his statement are the recommendations of the officer asking the appointment and of another officer who found the man very satisfactory. It has happened that two officers are agreed that a man's services are valueless to the government, while a third can show conclusively the contrary. In the army it is conceded that the foundation of a company is its noncommissioned officers, and in the constabulary this should be even more so, for we have to depend so much more upon them and to endeavor to get the very best material. In the constabulary it takes longer to train a noncommisioned officer, and consequently the efforts should be in the direction of his retention in the service and to his improvement in efficiency to the point of making him a candidate for a commission. This is too long a subject for an annual report, but I would recommend its full consideration with a view of adopting a better system for the instruction and discipline of the noncommissioned officers, on the theory that if we have good men in those grades we can rest assured of the proficiency of the privates. I would suggest that a permanent board of officers be appointed from those stationed at the district headquarters for the purpose of considering all appointments to the positions of noncommissioned officers and the discipline thereof, the decisions of such board being published by the district adjutant and subject to the disapproval of the district director if he sees fit to consider any case. This board should be guided in its deliberations by certain general rules issued to it by the director of constabulary.

In the matter of discipline in general of the enlisted men, I have recently instituted a system of merits and demerits under authority of the manual for the punishment of light offenses and at the same time to reward those whose conduct is good. A record of this is posted on the bulletin board so the men can see from day to day just how they stand. This record determines the fatigue parties, the issue of passes, etc. There is the spirit of gamble in it, each day bringing opportunities to win or to lose something worth while.

The leading paragraph on discipline indicates a possible inclination to centralize the control of discipline in the head of the constabulary, and it is not

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denied that this is the idea of the writer. I believe there should be more centralization, and am the more impressed by reason of the frequent changes in district directors. In the matter of the discipline of officers, it would seem best that more respect be demanded for the regulations under which we operate and that the enforcement of the manual and existing general and district orders be more specifically designated as the work of the corps of inspectors operating directly under the director of constabulary. This is as it is in the army, and is the only assurance the head of the organization can have that every section is being administered as he would have it. I do not mean by this to restrict the authority which the law concedes to the district director in his district, but in the matter of discipline, administration, and instruction I believe our rules and their observance should be uniform throughout the constabulary and not left to the personal views and inclinations of the district directors. In executive matters the authority of the district director is not bound by any limitations, and, while this is as it should be, still there should not be five distinct and different constabularies and these subject to radical changes as district directors are changed.

The medical division of this district is represented by two surgeons and ten enlisted men. There are two hospitals, one at Vigan and one at Tuguegarao. Neither of them is large, and they are intended only to provide a proper place for the treatment of serious cases. The surgeon at Vigan was recently ordered to Bontoc for the purpose of treating the many cases of sickness among our Igorot stations, due to the recent heavy rains and to the change of season. His orders contemplate the transfer of the Vigan hospital to that point also, if it is found that most good to the greatest number will result.

SUPPLY DEPARTMENT.

This department has been most efficiently conducted. So many of the stations in the district are at such a distance from steamer landings that the transportation of supplies is quite difficult. Pack ponies and cargadores are used. The pay and supply of the constabulary is distinctly creditable to the supply department and no general recommendations can be made for its improvement.

Very respectfully,

WALLACE C. TAYLOR,
Colonel and Assistant Director, District Director.

The EXECUTIVE INSPECTOR, BUREAU OF CONSTABULARY,
Manila, P. I.

REPORT OF DISTRICT DIRECTOR, FIFTH DISTRICT.

BUREAU OF CONSTABULARY,
HEADQUARTERS, FIFTH DISTRICT,
OFFICE OF DISTRICT DIRECTOR,
Zamboanga, P. I., July 15, 1908.

SIR: I have the honor to submit the following report of the fifth constabulary district for the fiscal year ended June 30, 1908:

The extent of the district and number and strength of the companies serving therein will be found in the appendix, as well as the list of officers who have been assigned to or relieved from duty in the district during the past fiscal year.[a]

The work of the constabulary in this district continues, as formerly, to be distinct from that of our organization in other parts of the archipelago, with the exception of Surigao and Misamis, where the duty performed by it since the inauguration of the subprovinces of Agusan and Bukidnon is similar to that performed by the constabulary of the fourth district in the provinces of Lepanto-Bontoc, Cagayan, and Isabela.

Reference to the appendix will show that in the Moro Province constabulary officers continue, as in the past, to fill important civil positions in addition to their other duties, and it has generally been found that such details help to

[a] Omitted, and filed in the Bureau of Insular Affairs, War Department.

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increase their prestige in their respective districts and to augment their usefulness in purely constabulary work by bringing them into closer touch with the natives. That the work of the constabulary is appreciated and that harmonious relations continue as in the past between it and military and civil officials in the Moro Province is sufficiently evident from the following extract taken from the last annual report of the governor of the Moro Province, Brig. Gen. Tasker H. Bliss, who is also commanding United States troops in the department of Mindanao:

"The services of the constabulary in the Moro Province have been of the greatest value and reflect the highest credit upon that admirable body. This is due to the high character, ability, and good judgment of the officers that have always been selected to command the fifth constabulary district and to the same qualities in the officers of the corps serving under them. It has always been our policy to utilize these officers to the utmost in the work of the civil government, and many positions of trust and importance have been filled by them with credit to themselves and satisfaction to the administration. Their services in the field have been equally commendable. At the present moment their principal work in this direction is in reducing the country back of the eastern shore of Lake Lanao to a law-abiding and orderly condition."

(The above-mentioned report was dated September 10, 1907, before the arrival of the writer in the district, and is for the fiscal year ended June 30, 1907, but was not published until early this year.)

PEACE CONDITIONS.

With the exception of Lanao, Basilan, and Jolo, peace conditions have been generally good throughout the fifth district, although in Lanao especially the constabulary has been kept constantly in the field, and until more companies are available for service in that district it is feared there is not much chance of conditions improving very rapidly. Further information respecting peace conditions will be found under remarks by provinces or districts.

Among the Moros and non-Christians slavery is rapidly dying out, and there has only been one case of human sacrifice reported during the past year. Occasionally acts of lawlessness still continue as in the past, but are generally the work of individuals, and except in Basilan, Lanao, and Jolo there are practically no armed bands of outlaws in the district.

With the exception of Misamis, religion and politics have little or no bearing on peace conditions in this district, the majority of the natives apparently being fully occupied with their own affairs, commercial and agricultural, and well content with the system of government under which they are living. Political agitators have occasionally visited Zamboanga and Davao, but their efforts heretofore appear to have met with little or no recognition.

COTABATO.

Governor, Maj. A. B. Foster, Philippine Scouts; secretary, Capt. C. E. Heartt, Philippine Constabulary; treasurer, Mathias Hugo.

Senior inspector, Capt. C. E. Heartt, Philippine Constabulary; strength of constabulary, 2 officers, 46 enlisted men; station of constabulary, Cotabato; area, 11,786 square miles; population, 125,875; municipalities, 2; tribal wards, 28.

Peace and tranquility continue to be excellent in this district. No organized outlaw bands are known to exist. There have been, however, several cases of carabao stealing reported during the past three months, and it is believed Datto Alamada, a renegade Moro, who has never been in Cotabato since American occupation and is reported to be located in the Buldon country, is responsible for the thefts. During the year there have been one case of assautl, five assassinations, and three cases of homicide in the entire district. No disturbance has arisen that could be traced to religious differences, and the dattos and sultans that are scattered throughout the district are bringing all disputes that arise between their respective rancherias to the tribal ward court for settlement, and tribal feuds have almost ceased to exist. The constabulary of this district, who are all Moros, exercise a considerable influence in a large number of rancherias, owing to relationship, a common religion, and the influence of time-expired men, who bring in information from time to time and assist in the selection of recruits. In January and February there was an epidemic of cholera, resulting in about 450 deaths, which seriously affected the different

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Moro markets for the time being; but an efficient quarantine was quickly established with the aid of scouts and constabulary serving in the district, and it has practically been stamped out. The constabulary of Cotabato are probably the most efficient in the fifth district, and, besides representing this district in Manila during the carnival, have performed considerable field service in Basilan and Lanao during the year. There is no doubt that on the whole the Cotabato Moro makes a most intelligent and efficient constabulary soldier, and at the present time Cotabato is being used as a recruiting station for the Moro companies serving in this district.

The Tyrurays, a tribe dwelling but a short distance south of Cotabato, have recently come into closer contact with constabulary and district officials than heretofore. They are a very tractable tribe, and by kindness and fair treatment could be induced to become good laborers. The country inhabited by this tribe is very fine land, consisting for the greater part of fertile highlands, offering a pleasing contrast to the low, swampy land occupied by the Moros. The Tyrurays are kindly disposed toward the constabulary and are beginning to become frequent visitors to the town of Cotabato.

It would be hard to put a limit on the resources of this district if properly developed. The Rio Grande, which flows through it, has many tributaries, and its larger branches are navigable for small launches, while the main river is navigable for 90 miles from its mouth. Hemp, tobacco, sugar cane, cocoanuts, rice, and rubber are raised, and in the mountains and forests are found hard wood, copal, honey and beeswax, gutta-percha, bejuca, and other jungle products, while on the foothills a small number of stock is raised, principally carabaos, horses, and goats.

Special events.—The following is a summary of special events, engagements, crimes, etc., during the fiscal year:[a]

December, 1907.—On the 18th Sergeant Lota and detachment return from ten days' expedition in the field, the sergeant with a bad attack of cholera, which he finally recovers from after ten days in hospital. During expedition five of the Moros who fired on Sergeant Dalundung in November are arrested and later tried and sentenced by tribal ward court.

On the 26th cholera is reported at Parang.

January, 1908.—Cholera still in evidence. Three hundred deaths reported; Cotabato quarantined.

February, 1908.—Cholera reported to have died out and quarantine is raised. Estimated number of deaths in district from cholera, between 400 and 500; only 2 deaths from cholera in town of Cotabato.

May, 1908.—On night of the 25th an unsuccessful attempt is made to break into and rob the post-office at Cotabato.

Several cases of cholera reported during the month at Malabang.

June, 1908.—On the 19th cholera epidemic at Malabang reported at an end, and quarantine against that town removed.

DAVAO.

Governor, Lieut. Allen Walker, Philippine Scouts; secretary, E. R. McFee; treasurer, L. L. Day; senior inspector, Capt. W. J. Platka, Philippine Constabulary; strength of constabulary, 4 officers, 93 enlisted men; stations of constabulary, Davao, Mati; area, 9,707 square miles; population, 65,496; municipalities, 4; tribal wards, 6.

This district has quite a colony of American planters, who are raising hemp, copra, and rubber. The copra and rubber industry is at present in its infancy. The natives of the hill tribes are gradually being induced to come down to the coast and to work on the plantations, are generally given a tract of land on which to live, and are encouraged to raise crops. Mr. Crumb, a planter at Digos, has been particularly successful in inducing the wild tribes to work and settle near the coast, and has a model Bagobo settlement of some 500 inhabitants that compares more than favorably with the average municipality. No outlaw organizations are at large, although small roving bands of wild men in the interior, who are continually fighting among themselves, occasionally commit depredations on the coast natives.

Sinbanan, a fanatical priest, who was instrumental in causing the murder of Governor Bolton on June 6, 1906; Labiton, a native, who killed Pascual Perlot,

[a] A considerable portion of this has been omitted and filed in the Bureau of Insular Affairs, War Department.

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a planter, at Vera Cruz, on May 2, 1908; and Guadis who killed an American called Sprague, are the only known outlaws still unaccounted for and have no band or following. In the interior the wild tribes can scarcely be said to be controlled by the government, although an attempt is now being made to open up the interior and to establish a form of civil government among the natives. It is stated that there are no less than 26 different dialects spoken in the district, which necessarily adds considerably to the difficulty of bringing the natives under American influence. Slavery to some extent still exists among the wild tribes in the interior, who have not yet been brought under American influence, and feuds are common. One case of human sacrifice occurred during the year at Talum, about 25 miles from Digos, where a Bagobo datto named Ansig sacrificed a Bilan boy to "Mandarangan," the Bagobo devil, to appease his wrath.

On May 19 a detachment of constabulary, under Subinspector Goicouria, with the assistance of some natives living in the neighborhood of Basaran, succeeded in locating and killing Calibay and Sumunson, the last of the band implicated in the murder of Governor Bolton.

Political and religious conditions at the present time are excellent. No epidemics of any kind occurred during the year. Several hemp plantations on the lower Davao Gulf, especially at Padada, have suffered from drought, but irrigation is now being installed to guard against any future damage from that cause. The principal produce of the district is hemp, though rubber and copra will probably supersede it in time.

Special events.—The following is a summary of special events, engagements, crimes, etc., during the fiscal year:[a]

August, 1907.—Japanese of Davao form a corporation, called "The Ohta Development Company," to plant rubber and extend the fishing industry.

Chinese of Davao form a company to work the pearl beds in the Gulf of Davao.

On the 8th Sergeant Salvador and a detachment of the First Davao located the Badudas outlaw camp, and in a fight which followed the chief, Margarito Badudas, Paolino Masudu, and 5 of the band were killed.

On the 18th Sergeant Salvador and his detachment again located the Badudas near Simuas, and in the fight which ensued Luis Leocadis and Jabias Badudas were killed and 5 of the band captured. The only remaining member of the band still at large is Antonio Badudas, who is reported to be living at Catagam, in the Agusan Valley.

December, 1907.—Mr. Edwards, a planter living at Sigaboy, reports an ex-policeman from Piso in the hills with 3 or 4 companies organizing a ladrone band and intimidating the natives. Lieutenant Youngblood locates their camp and destroys it, capturing several bolos and spears.

On the 21st the district governor receives notice that the Bagobos had offered a human sacrifice at Talon, near Digos, on December 9. Case investigated by the governor and senior inspector. Datto Ansig and his people make frank confession and are warned that such practices would not be permitted and that a report of the case would be made to the provincial governor, who would decide what action should be taken.

February, 1908.—Report received that opium is being smuggled in at Sarangani Point.

Calibay, one of the murderers of Governor Bolton, reported to be living in the hills near Malabay with two companions.

Sinbanan, the fanatical priest, reported to be living in the vicinity of Sarangani Point with about 200 followers.

Datto Ducu, with some 50 Mindayans, reported to be threatening the natives in the Cateel Valley.

May, 1908.—Subinspector Goicouria, with a detachment of constabulary, locates Calibay and Sumunson, the two murderers of Governor Bolton, who, in resisting arrest, are killed.

June, 1908.—Labiton, who killed Mr. Pascual Perlot, is reported to be at Butuan with Sinbanan, the fanatical priest who was implicated in the murder of Governor Bolton. Manobo Labiton, who threatened to kill Chino Pala, of Santa Cruz, in May, has been arrested and is awaiting trial at Davao.

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[a] A considerable portion of this matter has been omitted and filed in the Bureau of Insular Affairs, War Department.

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On the 6th report received from Mati that about 200 Moros had gathered there and were holding fanatical meetings and dances. The constabulary arrested 39, who were forwarded to Davao for disposition of the district governor. Their leader, however, Pandita Latibao, escaped, and is still at large.

LANAO.

Governor, Allen Gard; acting governor, Lieut. Jesse Gaston, U. S. Army; secretary, Lieut. Jesse Gaston, U. S. Army; treasurer, F. S. Lovenskiold.

Senior inspector, Lieut. P. E. Hemmett, Philippine constabulary; strength of constabulary, 5 officers, 93 enlisted men; station of constabulary, Dansalan; constabulary temporarily attached, 1 officer, 46 enlisted men; area, 3,900 square miles; population, about 50,000; municipalities, 3; tribal wards, 26.

This district, which is located in the center of Mindanao, bounded on the north by Iligan Bay and on the south by Illana Bay, with an inland lake some 20 miles long, 14 miles broad, and 2,400 feet above sea level, situated almost equidistant from its northern and southern coasts, with turbulent Moros living all around the lake basin and scattered all through the interior, continues, as in the past, to provide more active field service for the constabulary than all the rest of the districts of the Moro Province combined.

The constabulary has been kept so constantly in the field and with so few comforts and so little relaxation possible during the brief spells allowed them in their stations that it has proved impossible to reenlist time-expired men, though many of them were some of the best field soldiers we had in the district, and we are confronted with the problem of handling the hardest district in the Moro Province with raw recruits.

The following is a list of the principal outlaw bands reported to be still operating in Lanao. The strength of the bands and consequently the number of arms can only be considered as approximate and constantly fluctuates:

Outlaw bands reported still operating in Lanao.

Name of outlaw leader.	Estimated strength of band.	Camp or rendezvous.	Estimated firearms in possession of bands.				
			Krags.	Remingtons.	Revolvers.	Muskets.	Shotguns.
Ampuan-Agaus	200-300	Kumanga Valley.	11	30	15	18	.....
Amai Guindulungan	12	Kumanga	5	3	4	.....	.....
Tukalu	50-85	do	6	8	10	20	1
Amai Marur	3	Maciu	.....	.....	.....	3	.....
Total	265-400	.....	22	41	29	41	1

Their sphere of operations is pretty extensive, as they have been heard from as far north as within 3 miles of Iligan and as far south as Mataling Falls.

Ampuan-Agaus has probably the greatest prestige among the Moros of the outlaws mentioned. He is a native of the Taraca Valley and has the sympathy of a number of Moros in Taraca and Ramain, who outwardly appear loyal to the government. Amai Guindulungan is more or less closely associated with Ampuan-Aguas, with whom he frequently combines. Tukalu is also reported as combining on occasions with both Ami Guindulungan and Ampuan-Agaus. Amai Marur is the Moro who shot and seriously wounded Governor Gard on February 20, 1908. On March 21 the constabulary under Lieutenant Tarbell struck Amai Marur and his band in Makadar, killed six of his band, captured a musket and several krises and campilans, but failed to get Amai Marur, who managed to effect his escape.

The bands of outlaws mentioned generally confine themselves to sudden and unexpected attacks on the cottas and rancherias of friendly Moros for the purpose of confiscating their arms and of obtaining food supplies. To quote the senior inspector in his report, "I do not think we require as many troops here to quell disorders as is necessary in a province like Samar, although there are more guns in the hands of the outlaws and better organized bands to contend with than that province had during its recent pulahan trouble." And again, "Samar and Leyte have had their pulahans, who were really no worse, in fact, less well armed, than these old-time offenders in the district of Lanao,

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yet their provinces were thoroughly policed when occasion arose. Some dozen or more constabulary companies were put into Samar to assist the five companies of that province, to say nothing of the scout companies on duty with the civil government. I do not ask, nor do I expect, any such campaign to take place here, but merely state a few facts in the way of argument that more constabulary should be sent into this district to assist in winding up a question of long standing, which would mean the 'finis' of the well-organized bands that even dare to attack a two-company constabulary station within half a mile of a regimental post." As Lieutenant Hemmett saw considerable service in Samar during the campaign there it is presumed that he should be able to form an estimate as to comparative conditions in Samar and Lanao.

Up to May this year Lieutenant Wood was senior inspector of Lanao, and after the wounding of Governor Gard in February, also secretary and acting governor, and having served for over two years constantly in Lanao, was thoroughly familiar with conditions in the district. Lieutenant Hemmett, the present senior inspector, while a very competent officer, is not only new to conditions himself, but his officers and men are also practically unfamiliar with the country or the natives; hence, it may well appear to him a trifle harder proposition than is actually the case, though that more men and officers are required is without question.

Politics and religion do not affect peace conditions in this district in any shape or form. Tribal ward courts are located at Marahui, Iligan, Vicars, and Malabang, though the majority of the cases are brought to Marahui for trial. The greater part of the work of the tribal ward courts is in arbitrating questions which arise as to relations existing between the dattos and their "sacopes," or lower-class Moros.

There are practically only two tribes in the district, namely, the Maranaos, or lake Moros, and the Manobos. The former, inhabiting the country around the lake basin, are approximately 50,000 strong and all Mohammedans; the latter are few in number and live in the Capay country in the hills bordering Lanao and Misamis. They have no religion and give little or no trouble. In December an epidemic of cholera struck the district and some 300 deaths were reported; a few cases of glanders were also reported in Iligan.

Special events.—The following is a summary of special events, engagements, crimes, etc., during the fiscal year:[a]

July, 1907.—During the month three expeditions were made against Ampuan-Agaus, only one of them being partly successful, owing to all trails from Boyan to his camp at Kumanga having outposts.

September, 1907.—Lieutenant Wood and detachment had an encounter with Amai-Binassing, an outlaw Puna-Maciu Moro, and his band on the 4th instant, resulting in the death of Amai-Binassing and 13 of his band and the capture of 1 Krag rifle, 2 muskets, several lances, krises, and campilans, and 200 rounds of Krag ammunition.

Amai-Mama-Banquit reports that Ampuan-Agaus, Macapatan, and Paniangan, of Kumanga, held a meeting of their followers to arrange for a system of attacking soldiers traveling over the Keithley-Marahui road at night, to avenge death of Amai-Binassing and his men.

A Krag rifle and a number of old guns were turned in by the Maciu Moros a few days after the death of Amai-Binassing. Gunda Uali, for many years one of the chief Moro outlaws in Maciu, presented himself to the district governor, announced his intention of living at peace with the government, now visits Marahui frequently and is reinstated in his former rancheria in Maciu.

Report received that Lanao Moros attacked a number of Jolo and Zamboanga Moros who were fishing near Liangan, drove them from their vintas, shot one Moro in leg with a revolver, and stole ₱400.

November, 1907.—Three deaths from cholera at Iligan and quarantine established with constabulary.

A case with seven new-model Springfield rifles, caliber .30, reported found near Oroquieta. Supposed to have been lost from Overton. Several small expeditions during month.

Manalao, an outlaw Moro of Taraca, with a considerable following and several guns, visits lower Taraca and murders two children. Constabulary under Lieutenant Tarbell pursue, but Manalao escapes into hills.

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[a] A considerable portion of this matter has been omitted and filed in the Bureau of Insular Affairs, War Department.

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December, 1907.—Cholera at Iligan worse, and considerable cholera among lake Moros who, owing to quarantine, are also suffering from lack of food.

Several cases of glanders turned over to veterinarian. Nural Hakim and Raja Bagandali, both badly wanted Moros, die of cholera.

January, 1908.—Unsuccessful attempt made by 8 Moros to attack cuartel at Iligan.

Lieutenant Wood and detachment attack Amai Guindalungan's camp in upper Ramain, killing three of his men, including his nephew, driving the rest into the hills and destroying their houses and effects.

On the 24th about 80 Moros armed with some 50 rifles under Amai Guindalungan and Ampuan Agaus made a night attack on constabulary cuartel at Dansalan, lasting about twenty minutes. During attack outlaws came within less than 30 yards of cuartel.

February, 1908.—On the 19th District Governor Gard, while attempting to arrest Gundu-Uali at Dulungan, with an escort of the Sixth U. S. Cavalry from Malabang, was shot and seriously wounded by Amai Marur, uncle of Gundu-Uali.

March, 1908.—On the 2d Señor Vidal's ranch, about 3 miles south of Iligan, attacked by Amai Guindalungan with 25 guns. One Filipino and two women killed. A Moro called Calis, one of the band, killed. Outlaw band of Moros from Lake Nunungan, under Datto Anculu, attacked vinta near Marga and killed Moro Canacanand and his son Ingagay.

On the 4th Lieutenant Tarbell and detachment struck band of Amai Marur, killed six of his men, captured one musket and several krises and campilans at Makadar.

On the 18th Lieutenant Wood and detachment destroyed 4 houses used by Ampuan Agaus and his men at Kayagan.

During March nearly 100 guns turned in by lake Moros to acting district governor.

April, 1908,—On the 9th Lieutenant Wood, with 65 constabulary soldiers, and Lieutenant Endsley, with 20 men of the Eighteenth Infantry, had skirmish with Ampuan Agaus at Ilian, upper Ramain, killing 5 outlaws. Constabulary casualties, 2 men killed.

On the 21st Lieutenant Hemmett and detachment of constabulary have skirmish with Ampuan Agaus.

On the 22d Lieutenant Hemmett and detachment have skirmish with hostile Moros in cotta, midway between Tugaya and Calahui. Moro loss, 4 killed.

May, 1908.—On the 9th Moros reported to belong to band of Amai Guindalungan killed 1 Chino and wounded 2 others on road between Tiradores Hill and scout camp at Momungan.

June, 1908.—Between the 1st and 10th Lieutenant Burr and detachment made expedition to Gas to arrest Datto Sangu, and were fired at from a thicket, wounding Private Estaquio Macaraeg in the left shoulder. One outlaw killed.

Between the 17th and 22d a combined military and constabulary column under Captain Martin, of the Eighteenth Infantry, and Lieutenant Fort, First Lanao Constabulary, made an attack on Ampuan Aguas and Amai Guindalungan at Ilian, located within the mountains inclosing the Kumanga Valley, killing 33.

On the 24th Lieutenants Fulton and Whitney, with a constabulary detachment, attack a cotta occupied by outlaws midway between Tugaya and Calahui, killing 24 of the band.

On the 26th Gunda Uali, a prisoner held for murder of Roadmaster Smith at Mataling Falls on February 6, 1908, was killed by constabulary guard while attempting to escape with prisoner, Atta, a notorious Moro outlaw, who succeeded in effecting his escape. It was found on investigation that Gunda Uali and Atta had arranged their escape with the connivance of the other prisoners in the guardhouse, and, if successful, were to join Amai Guindalungan in the Kumanga Valley and to return with a force sufficient to liberate the remaining prisoners.

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MISAMIS.

[Including subprovince of Bukidnon.]

Governor, Apolinar Velez; third member, Pedro Roa; treasurer, William M. Gracey.

Senior inspector, Capt. R. H. Griffiths, Philippine Constabulary; strength of constabulary, 5 officers, 93 enlisted men; stations of constabulary, Cagayan, Misamis; area, 3,777 square miles; population, 175,683; municipalities, 10.

No organized band of outlaws is known to be in existence in this province. Present peace conditions are fairly good; the montescos, or non-Christians, are becoming more satisfied each day with the separate government of the subprovince of Bukidnon, and Lieutenant-Governor Lewis has induced many of them to leave the hills, where they have roamed for years, and to settle in towns which he is establishing. The remainder of the bands that were in revolt against the new form of government in December and January have now settled at Impuusungan and have caused no further trouble. The montescos have recently improved their towns to such an extent that the inhabitants of Cagayan have followed their example, and the senior inspector reports that many of the improvements introduced in Cagayan originated in the subprovince of Bukidnon.

The relations between the montescos and the people of the coast is not as cordial as formerly, which is probably due to the former realizing their rights, demanding fair prices for their products, and refusing to submit to the high-grade oppression that was formerly their lot. Since January 1 very few montesco cases have been tried before the court of first instance.

The relations between the different rancherias have greatly improved, and the bad feeling between Cusina and Dagondalajon has entirely disappeared since the two Cusina men who killed several natives of Dagondalajon were arrested.

Very little interest in the last election was manifested by the people of Misamis; the results caused no disturbance, and seem to have been generally anticipated. The only important contest over the result was made by the government, and terminated in Ramon Neri, who had been elected third member of the provincial board, being found guilty of violating the election law and sentenced to imprisonment for three months.

Religious conditions, however, could not be much worse, though the feeling between the two sects has abated somewhat since last May. The burning of the church at Tudela, on April 28, and the stealing of the bell from the Romanista church at Mambajo on the following day were the direct results of this feeling. However, the prompt suspension of the presidente of Tudela by the governor-general, the arrest of the parties who set fire to the church, and the arrest of all who were implicated in the stealing of the tongues from the church bells at Mambajo have caused the agitators to pause and consider awhile; and should the parties now awaiting trial be convicted there is little doubt but that the use of criminal methods in the fight between the different religious factions in this province will receive a severe check.

In the section of Misamis Province situated on the west side of Iligan Bay there has been a considerable amount of carabao stealing, for which the Moros of Tubud and Bulud, Lanao, are reported to be responsible.

In December a flood in the town of Langaran, caused by the river overflowing, resulted in the loss of about a dozen nipa houses and damage to many others and a great number of cocoanut trees. Locusts ruined most of the rice planted in the northern part of the province in August. No general suffering was reported, but a petition was made to have the land and cedula taxes suspended. However, quick-growing crops, such as corn and camotes, were planted and no case of actual want occurred.

Many horses and carabaos died in the latter part of 1907 through disease, but there are still enough available to carry on business. Although there is plenty of vacant rice land, it is reported that at no time has the province raised enough rice for home consumption.

A serious epidemic, which caused many deaths in January, occurred in Loculan, which at first was thought to be cholera, but later proved to be poisoning caused by excessive eating of mountain pork and new rice. Hemp and copra crops have been very good, but the price has fluctuated so much that there has been little profit in either. Some rubber was shipped and about half the usual amount of rice raised. Relations of the constabulary with the provincial and municipal officials are believed to be cordial.

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Special events.—The following is a summary of special events, engagements, crimes, etc., during the fiscal year:[a]

August, 1907.—Mambajo raises ₱11,000 toward school building for municipality to augment the ₱10,000 donated by central government. Oroquieta requests insular government for a donation of ₱6,000 to augment the ₱9,000 already expended by municipality for an intermediate school. Provincial government of Misamis sets aside ₱5,200 and will raise ₱11,000 by popular subscription for school building, provided central government donates ₱16,000.

January, 1908.—Lieutenant Fortich and detachment returns from expedition near Maluco and reports an encounter with the montesco outlaw, Mansanjian, near the headwaters of the Palangi river. Outlaw wounded, but escaped.

On the 8th the safe of the municipal treasurer at Misamis was robbed of ₱490.96. Broken safe found in center of plaza.

On the 10th Ramon Neri, prominent citizen of Cagayan, convicted of violating election law and sentenced to three months and one day's imprisonment. Case appealed.

On the 27th Lieutenant Fortich and detachment had encounter with Mansanjian's band under Manlintona near Maluco. Manlintona and 4 of the band reported killed; 2 wounded.

February, 1908.—On the 16th a small-sized riot occurred, owing to a fight between the two political parties in Misamis. The presidente called on the constabulary for assistance, who quickly dispersed the combatants and patrolled the town. Later the principals surrendered themselves to the justice of the peace.

March, 1908.—At Misamis, on the 5th, a large warehouse, the property of a Chinaman, was destroyed by fire of supposedly incendiary origin. The only assistance rendered in extinguishing the fire was that given by the constabulary and the telegraph operator.

April, 1908.—On the 10th Lieutenant Lattimore reports his return from pursuit of certain Moro carabao thieves in vicinity of Tangup, and that he had a small skirmish with them, capturing 80 rounds of ammunition and 4 of the band

On the 11th provincial governor reports that on the 6th instant Rafael Jansalan, of Villanueva, a barrio of Tagalaon, was robbed of ₱2,000 and jewelry to value of ₱94.

On the 16th Lieutenant Fortich and detachment captured 3 men, who confessed to having robbed Rafael Jansalan on the 6th instant and revealed the hiding place of part of the money and all of the jewelry.

On the 29th information received that the Roman Catholic church at Tudela, a barrio of Misamis, was burned. Mansanjian, leader of the band which operated in vicinity of Maluco, and who was recently wounded in an encounter with Lieutenant Fortich and his detachment, surrendered to Governor Lewis during the month. This surrender practically accounts for the whole band, as Moyaki, who killed Benito Salajay and Inay Jusamena (montesco woman and boy) in Maluco early in November, 1907, was captured the latter part of March, and Manlukina was killed by the constabulary in January.

Esteban Pampilio, one of the two men who were reported missing from Misamis since December, 1907, and as killed or captured by Moros, is reported to be in Nunungan, Lanao, and his companion as killed.

Provincial treasurer reports that some time between March and April 22, twelve cans of opium were stolen from a locked cabinet in his office.

May, 1908.—On the 5th the tongues were stolen from the bells of the Mambajo Church and the organ damaged. Five men, having been arrested, are awaiting trial and two have confessed.

SULU.

Governor, Col. Alexander Rodgers, U. S. Army; secretary, Capt. G. L. Byram, U. S. Army; treasurer, Charles B. McGhee.

Senior inspector, Capt. F. S. DeWitt, Philippine constabulary; strength of constabulary, 3 officers, 81 enlisted men; stations of constabulary, Siasi, Bongao; area, 1,039 square miles; population, 89,902; municipalities, 2; tribal wards, 8.

Generally speaking, conditions in this district are peaceful and the relations between the constabulary and natives excellent. Owing to the district being

[a] A considerable portion of this text has been omitted and filed in the Bureau of Insular Affairs, War Department.

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comprised of a group of more or less isolated islands, civil government has perhaps made less progress here than elsewhere in the Moro Province.

At the present time there is only one organized band of outlaws in this district, and their operations have been confined to the island of Jolo, which is garrisoned by United States troops and on which the constabulary do not operate. This band is under the leadership of Jikiri, a Joloano Moro, who early in the present year murdered two Americans and one Chino on the island of Basilan, near Zamboanga. He probably has about six followers. Several murders on the island of Jolo have been credited to Jikiri and his band, and a few months ago Miabun, the capital of the sultan of Sulu, was raided and partially burned and several Chinos were murdered. Several expeditions have been made against Jikiri by the military, but he has so far eluded capture. Factional fights between the various dattos occasionally occur, but are yearly becoming less frequent. No serious trouble has been reported during the past year, except on the island of Tapul, where on May 20 a fight took place between the followers of Maharajah Karanine and Iman Mullan, during which two men were killed and one woman was fatally wounded. Within three days after the fight took place all parties concerned were arrested by the constabulary and are now confined in the district jail at Jolo awaiting trial by the court of first instance.

The senior inspector, who is stationed at Siasi and acts as deputy governor and auxiliary justice of the tribal ward courts of Siasi and Bongao, holds a meeting of all dattos every three months, when the laws affecting them are read and explained and questions asked and answered. It will, however, take considerable time before all the Moros in this district embrace fully our ideas and forms of civil government. There are no political or religious differences existing in the district.

During the past year three large plantations have been started with American capital, and a small experiment mill for the reduction of tapioca to flour has been installed, and in addition to the tapioca a large number of rubber and cocoanut trees have been planted, and several acres of peanuts. The natives grow considerable corn, sugar cane, rice, and sweet potatoes, and the waters of the Sulu Archipelago abound in fish, so that the dried-fish industry is one of the most important in the district. From Sitanki alone the Chinese merchants ship from 10 to 30 tons of dried fish per month. The principal articles of export are pearls, pearl shells, sea slugs, caracle, tortoise shells, shark fins, bejuca, mats, and tangal, bankuro, and dulao, the last three articles being the bark of a tree much used in making dyes which are exported to Singapore and British North Borneo. Most of the boats used in this district are built at Balumbing, on Tawi Tawi Island, where there is considerable business in boat building.

Special events.—The following is a summary of special events, engagements, crimes, etc., during the fiscal year:[a]

August, 1907.—Sultan of Sulu attempts to levy contributions. Several Japanese, said to be carpenters, visit the sultan.

September, 1907.—Investigation shows the sultan had levied and collected contributions in Tapul, Lugus, Kabingan, and Laminusa islands, consisting of money, timbers, carabaos, and goats. Several headmen, who had ordered their people to contribute and threatened to impose a fine of ₱10 on those who failed to comply, are suspended.

Rumors received that contributions had also been collected in Seminoi, Tawi Tawi, Sibutu, and Manukmanka islands.

December, 1907.—Nakib Asary and 21 of his men arrested and disarmed by Captain DeWitt and detachment of 10 men, in compliance with request of the district governor.

April, 1908.—Reports received that Jikiri, a Moro outlaw from Jolo, had announced his intention of paying the Siasi district a visit.

May, 1908.—Disturbing reports as to the movements of the outlaw, Jikiri, continue, causing much unrest among the natives living on the islands in the vicinity of Siasi.

On the 18th an attempt is made to burn the constabulary office building at Siasi, this making the ninth unsuccessful attempt to set fire to the building since the organization of the constabulary of Sulu.

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[a] A considerable portion of this text has been omitted and filed in the Bureau of Insular Affairs, War Department.

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About the 6th two Chino merchants were murdered at Cadingaan Island.

On the 20th about thirty Moros on the island of Tapul became engaged in a fight, resulting in two men being killed and one woman being fatally wounded. All Moros implicated were arrested by Captain DeWitt on the 26th instant and remanded for trial by court of first instance.

SURIGAO.

[And Agusan Province.]

Governor, Pio G. Kaimo; third member, Emilio D. San Luis; treasurer, J. H. Graves.

Senior inspector, Capt. Olo Waloe, Philippine constabulary; strength of constabulary, 2 officers, 40 enlisted men; stations of constabulary, Surigao, Butuan, Talacogan; area, 6,988 square miles; population, 114,607; municipalities, 9.

The province has been in a state of tranquillity during the entire year. No organized band of outlaws exists nor is any individual outlaw known to be at large. One murder was committed in the municipality of Campilan, and the murderer is now in the provincial jail awaiting trial by the court of first instance. Since the organization of the Agusan Province very little official relations exist between the Visayan and the mountain tribes, though commercial relations remain much as heretofore. The Visayans are afraid of the Manobos, as they are bad enemies and carry an old grudge through generations, transferring it from father to son until vengeance has been obtained. However, the Visayans at the same time look down upon the Manobos as being greatly inferior to themselves, and however poor, rarely, if ever, contract a marriage alliance with a Manobo family, even though the latter has power and property.

The people of the province appear to take very little interest in politics. They apparently appreciate their present form of government and have no desire for immediate independence.

The Aglipayans have churches in three or four towns of the province, but they are by no means strong and are fast losing what little influence they had. The Roman Church is represented by Spanish priests of the Benedictine order, and in some of the towns they exercise great influence over the people, while in others it is not so strong. Their influence appears to a large extent to depend upon the personality of the priest.

Agusan Province.—Until quite recently peace conditions in Agusan Province were very satisfactory. However, in June Mr. Ickis, of the bureau of science, escorted by Pvt. Pastor Napal, of the Surigao constabulary, were both treacherously murdered by their Manobo cargadores in the mountains between Talacogan and Malabalay. So far as can be ascertained, the murder was the work of Tauidy, a Manobo, whose father, Gubat, had been arrested and placed in jail in Surigao, where he eventually died during the time of the Spanish government. Lieutenant Zapanta, Governor Johnson, and half a company of Surigao constabulary are at present in the field for the purpose of further investigating the crime and making the necessary arrests of those implicated.

Two other murders were committed in the municipality of Cabadaran during the year. The criminals, however, were apprehended and are now serving sentence in Bilibid. The Manobo tribes do not like the Visayans, but from generations of association in trade prefer to allow the Butuan Visayans to rob them in trade rather than trade with strangers who give them a square deal. A few years ago McCloud & Co. established a branch store in Talacogan; they paid high prices for hemp and sold their goods at extremely low prices, but in a short time had to close, as the Manobos would not deal directly with them, thinking that some great calamity would overtake them or their tribe if they bought the goods offered them so cheaply.

Lieutenant Zapanta and the constabulary are doing hard work in this province, and have been constantly in the field since its organization, reorganizing the barrios and aiding the governor in every way possible.

There is little or no politics in Butuan at the present time. The Roman Catholic Church is represented by Jesuit priests, who have great influence over the people, with the exception of the town of Cabadaran, where there is an Aglipayan Church with a considerable following. Cordial relations exist between the constabulary and provincial and municipal officials, and the governors of both Agusan and Surigao provinces have urgently requested more constabulary to assist them in their work.

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Special events.—The following is a summary of special events, engagements, crimes, etc., during the fiscal year:[a]

January, 1908.—On the 10th the barrios of Timmamana and Maynet of the municipality of Placer, and Manimono and Anon-aon of the municipality of Surigao, which were separated from their respective municipalities by Act No. 1692 and made part of the Agusan Province under the provisions of Act No. 1396, were returned to their former status by executive order No. 2, current series.

March, 1908.—On the 31st Captain Waloe arrested Eleno Bicao, while he was visiting Surigao incognito, on a warrant issued against him by the court of first instance for violation of the opium law.

Low prices generally obtain throughout the province for hemp and copra, while the second rice crop is a failure on account of heavy rains.

April, 1908.—The provincial governor, during an inspection trip to the towns on the Pacific coast, inaugurated a strenuous campaign for the improvement of the towns visited.

May, 1908.—The presidente, justice of the peace, and municipal councillor of Lianga were tried for illegal collection of taxes, but liberated for lack of evidence.

Financial depression general throughout the province, owing to the low prices that obtain for hemp and copra. No actual lack of food, but people experience difficulty in paying their taxes. The governor advises the planting of corn, camotes, and other quick-growing crops to relieve the situation.

On the 31st Captain Waloe arrested Chino Cha on a warrant from the justice of the peace of Butuan for violation of opium law.

June, 1908.—Report received from Governor Johnson, of Agusan Province, to the effect that Mr. H. M. Ickis, of the bureau of science, and Pvt. Napal Pastor, First Surigao, who was acting as escort, were murdered on or about May 18 by a Manobo named Tauidy, near the headwaters of the Umayan River, Agusan Province. Motive for murder supposed to have been desire for vengeance for death of Gubat, Tauidy's father, who had been confined and died in jail during the Spanish régime. Governor Johnson, Lieutenant Zapanta, and a detachment of 20 constabulary are at present in the field to investigate the crime and arrest the murderer.

ZAMBOANGA.

Governor, Maj. J. P. Finley, U. S. Army; secretary, J. M. Browne; treasurer, (vacant).

Senior inspector, Lieut. H. H. Elarth, Philippine constabulary; strength of constabulary, 8 officers, 159 enlisted men; stations of constabulary, Zamboanga, Calarian, Sengal, Dapitan, Dipolog, Maluso, Guiong; constabulary temporarily attached, 1 officer, 46 enlisted men; area, 5,591 square miles; population, 66,360; municipalities, 2; tribal wards, 5.

Peace conditions in this province have been very satisfactory throughout the past fiscal year with the exception of an uprising in the island of Basilan, which, however, it is believed has now been satisfactorily terminated since the capture of Salif Aguil by Captain Shaffer, of the Twenty-third Infantry, a few days ago. The trouble in Basilan had been brewing for years, and bad Moros driven out of Jolo found refuge there, where they continued their robberies under the protection of powerful dattos. On August 31, 1907, the district governor requested that an officer of constabulary and 15 men be sent to Basilan to capture certain outlaws who were terrorizing the natives, and for the arrest of whom warrants had been issued. Lieutenant Furlong and 15 men were sent over on September 6, and by the 26th of the same month, after one engagement in which 12 Moros were killed, all the outlaw leaders, 6 in number, had been accounted for as either killed or captured.

Matters remained quiet for a time, but on December 24 some Joloano Moros murdered two American lumbermen, Vermont and Case, and constabulary and United States troops were sent to capture the murderers. After a campaign of about two weeks' duration, in the course of which one outlaw leader was killed and two constabulary soldiers wounded, all troops were recalled. Interpreting this as a sign of weakness, a few of the bolder spirits among the Moros combined together in bands which robbed and terrorized the peaceably inclined

[a] A considerable portion of this text has been omitted and filed in the Bureau of Insular Affairs, War Department.

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natives. One company of constabulary sent to take station on Basilan was said by the district governor to be insufficient to handle the situation, so four companies of infantry and one more company of constabulary were sent to take station on various points of the island, with instructions to make frequent marches into the interior and to confiscate all firearms and other weapons of warfare. Maj. John P. Finley, U. S. Army, district governor of Zamboanga, was placed in charge of all forces operating in Basilan. This action apparently had the desired effect, breaking up the hostile bands, forcing the Joloano Moros to leave the island, and reassuring the friendly natives. With the capture of Salif Aguil, the real head of all organized resistance to the government, conditions in Basilan will probably again become normal in a short time.

Special events.—The following is a summary of special events, engagements, crimes, etc., during the fiscal year:

September, 1907.—On the 26th Lieutenant Furlong located Moro Tahil and his band at Mangal, Basilan, and in the fight which followed Tahil and 11 of his followers were killed. Five guns and several campilans, krises, and 300 or 400 rounds of ammunition were captured.

December, 1907.—On the 24th two Americans, Vermont and Case, and one Chinaman were murdered at Matungal, Basilan, by a Joloana outlaw called Jikiri and his band. United States troops were immediately sent to Basilan.

January, 1908.—On the 11th cholera broke out at Tucuran and lasted until February 9. Owing to quarantine established and active personal supervision by Subinspector Cariaga, there were only twelve deaths.

Subinspector Cariaga reports Moro Mamenting, with 17 armed men (2 guns), in the mountains back of Tucuran.

February, 1908.—During the month about 30 guns, 35 spears, and 40 bolos were turned in to Lieutenant Youngblood at Bojelebung.

March, 1908.—During the month Moro Salif Aguil, with a number of followers armed with guns, took to the hills and defied the government to come and get him. He also warned the peaceful natives against obeying or aiding the government in any way, and commenced stealing carabaos and horses. Palawan Arali, a noted outlaw, joined him as his lieutenant. The settlements of Basack, Meback, Tipu-Tipu, Kahegasin, and Buangbatu joined the Salif and also Haji Mohamed, with a following of Joloano Moros

April, 1908.—On the 4th the combined forces of the military and constabulary encountered the outlaws near Bojelebung. Marica, the outlaw leader, was killed, and Lieutenant Stader, of the constabulary, wounded. A few spears, bolos, and shields were captured.

On the 19th Lieutenant Youngblood, with Lieutenants Jones and Guthrie and 60 men, made an expedition around the entire island of Basilan and returned on the 27th without encountering any outlaws. Salif Aguil is reported to be in hiding in the hills with only 4 followers armed with Remington rifles. During the month about 59 muskets, 2 shotguns, 3 Remingtons, 3 Mauser rifles, 11 barongs, 7 krises, 20 piras, and 60 spears were captured and turned over to the district governor.

May, 1908.—On the 21st Salif Aguil, with about 200 followers, presented himself at Bojelebung to meet the provincial governor of Moro Province and discuss terms of surrender. No agreement, however, was reached, and the Salif and his men returned to the hills.

June, 1908.—On the 6th Lieutenant Youngblood made an expedition into the Tipu-Tipu country for the purpose of capturing the Salif, who was located and captured by Captain Shaffer, U. S. Army, before the arrival of Lieutenant Youngblood at his hiding place. Palawan Arali was captured a few days later by the military at Bojelebung.

MUNICIPAL POLICE.

A tabulated statement giving the efficiency, strength, and average rates of pay, number, and class of arms, etc., of the municipal police throughout the fifth district will be found in the appendix.[a]

COTABATO.

There are only two municipalities in this district, Cotabato and Parang, and the police, besides regular patrol duty and the enforcement of municipal ordinances, are also required to guard district prisoners working on the roads.

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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They are not under the constabulary, but are inspected by the senior inspector whenever so requested by the district governor. They appear on the whole to be efficient. The chief of police at Parang is an American.

The police at Cotabato should be increased by five or six privates, as the work they are required to perform is somewhat too heavy for the present force.

DAVAO.

There are five municipalities in this district, Davao, Mati, Caraga, Baganga, and Boston, and with the exception of Davao, the police are not a very efficient force. The constabulary have no jurisdiction over the police of this district and only inspect same when requested to do so by the district governor. The police at Davao should be increased, as for some time past the constabulary have had to assist in guarding municipal and district prisoners when badly needing men elsewhere.

LANAO.

This district has three municipalities, Iligan, Dansalan, and Malabang. The chief of police at both Iligan and Malabang is an American. The majority of the police at Dansalan are ex-constabulary soldiers. The constabulary has no jurisdiction over the police, but inspect same when requested to do so by the district governor.

MISAMIS.

The police of Cagayan, Oroquieta, and Mambajo are "good;" those of Jiminez, Langaran, and Talisayan, "fair;" those of Misamis and Balingasag, "poor;" and those of Initao, Gingoog, and Togalaon, "very poor."

With the exception of Cagayan and Oroquieta, all police in the province should be reuniformed. At the present time it is frequently difficult to distinguish a policeman from an ordinary citizen. Better salaries should be paid, and with greater regularity, in order to attract a better class of men. Where considered necessary for the police to have firearms, only Colt's double action, caliber .45, should be used, and generally the police should be armed with clubs and machetes, which it is believed would be found all that is necessary for the proper performance of their duties.

SULU.

There are only three municipalities in this district, Jolo, Siasi, and Bongao, of which only Siasi and Jolo have any police force, and Siasi is the only force inspected and supervised by the constabulary. The police at Jolo are being recruited from ex-constabulary soldiers, who are said to make very efficient police. The duties of the police at Siasi are light, and, for the salaries paid them, are as efficient as could well be expected.

SURIGAO AND AGUSAN.

In the nine municipalities of Surigao the police are all uniformed and rationed by their respective municipalities. The police are generally willing and loyal, and have improved during the year, though there is still room for further improvement in efficiency and appearance. The governor has recently requested the senior inspector to draw up a set of police regulations, with recommendations as to strength, uniform, and pay, and outlining the duties and responsibilities of the police.

In the three municipalities of Agusan the police are also rationed and uniformed by their respective municipalities. Their chief work since the recent organization of the province has been in conjunction with the constabulary. They are closely supervised by the provincial board and bid fair to become an efficient force. They are only used for police work and have a better appearance than the police of Surigao.

ZAMBOANGA.

The police of the district are, on the whole, well instructed, efficient, and present a good appearance. Dapitan and Zamboanga are the only municipalities in the district, the former having 11 and the latter 35 police. They are armed with machetes and clubs, and only inspected by the constabulary at the request of the district governor.

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PHILIPPINE SCOUTS.

There are no scout organizations serving with the constabulary in this district. The Seventh Battalion of Philippine scouts, under the command of Maj. A. B. Foster, district governor, are on duty in the district of Cotabato and are stationed at Cotabato (headquarters), Pikit, Cudarangan, and Reina Regente, comprising the Forty-second, Eleventh, Forty-fifth, Tenth, and Eighth companies of Philippine scouts.

Other scout companies serving in the district are as follows: Ninth Company, Camp Vicars, Lanao; Fiftieth Company, Margosatubig, Zamboanga; and Fifteenth Company, Camp Overton, Lanao.

MEDICAL ORGANIZATION.

Since January, 1907, there has been no district surgeon at these headquarters, though arrangements have recently been made to transfer First Lieut. C. E. Laws, surgeon, Philippine Constabulary, from Cagayan to Zamboanga as acting district surgeon. The constabulary of Sulu, Cotabato, and Zamboanga, comprising some six companies, four of which are in more or less isolated posts, has had to depend entirely on the military for medical assistance.

The military surgeons are inclined to feel that in treating the constabulary without receiving any remuneration for their services they are being imposed upon, and even so, the two companies stationed at Zamboanga and Cotabato are the only ones that are within easy reach of a military hospital and receive any medical attendance. Recruits enlisted for the Sulu Constabulary at Bongao and Siasi have sometimes had several months' service, owing to lack of transportation facilities, before arrangements could be made to have them examined physically.

It is believed that a small hospital sufficient to accommodate half a dozen patients, with a dispensary and operating room, should be established at these headquarters, so that the district surgeon could regularly inspect all constabulary stations where no medical attendance is available and transfer such cases as he found necessary to Zamboanga for treatment. The argument used by Colonel Borseth in his annual report for this district for the fiscal year ending June 30, 1907, still holds good, and there can be no doubt that in case of cholera or any epidemic at these headquarters, not only the enlisted men but all officers and clerks residing or employed within the building would be liable to quarantine.

Captain Ames, surgeon, Philippine Constabulary, has a small hospital at Davao, visits the stations in Davao regularly, and does a considerable amount of gratuitous work among the wild tribes and indigent Filipinos of the district, besides attending the American planters, who are increasing in number throughout the district and would scarcely care to remain there were no medical attendance available.

The necessity for a surgeon at Dansalan is also very apparent. The three companies at present stationed there are about a mile from the nearest military hospital, are kept constantly in the field, and, as may be seen from reference to the tabulated statement of "Casualties" furnished in the appendix [a] of this report, have had an unusually large percentage of men who should have had some kind of medical attention in the field. Arrangements could be made, it is believed, with the district governor and the municipality at Dansalan to erect a small ward and dispensary, where not only the constabulary but civilians and Moros could be treated, which, without doubt, would greatly augment the influence of the government among some of the most turbulent natives in the Moro Province. The issue of a Mason's Handbook to all company commanders serving in this district where no medical officer is available is urgently recommended.

ARMS AND EQUIPMENT.

All companies in the district are now armed with the Krag carbine, caliber .30, which has so far been found entirely satisfactory and a vast improvement over the old Springfield carbine, caliber .45. It is, however, the unanimous opinion of all officers in this district that the allowance of 30 rounds per man for target practice is entirely inadequate and should be increased to at least 60 rounds. It is also recommended that each district be authorized an expen-

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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diture of not to exceed 90 rounds per company, to be expended in a district rifle competition to be held at district headquarters every year, at which the three best marksmen from each company will compete for best individual score, a medal to be awarded to the best individual shot and a trophy to the company which furnishes the best team. All cartridge pouches, caliber .45, fair leather, should be turned in to the ordnance officer in Manila, as they are never used or requisitioned for, officers having learned by experience that their use in the field is attended by loss of ammunition.

The present steel bayonet scabbard attachment, which soils and wears out the belt and is easily broken, should be replaced by a leather frog attachment, which should extend down the scabbard about 4 inches, similar to the frog and belt attachment for noncommissioned officers' swords.

A distinctive corps saber, similar to that used by marine officers, and an improved saber belt, would be appreciated by most officers and would cost nothing to the government.

There have already been so many changes in our uniform during the few short years of our existence that one is rather diffident about suggesting further changes. However, it is recommended that a representative board of officers, which, as far as is practicable, should be composed of purely constabulary officers, be convened and recommend to the director changes in the present uniform and rank insignia, and that a circular letter be sent to all officers inviting them to forward suggestions and to make recommendations to such board.

The adoption of the fez for officers serving with Moro companies in this district is recommended and has been suggested by several officers. Also authority to modify the present mess uniform so as to authorize officers in this district wearing black dress trousers with a 2-inch gold or dark-red stripe down the seams, black patent leather shoes, and a dark-red cumerbund in lieu of the waistcoat. All companies should be equipped as soon as possible with the United States Army haversack.

The helmet, with a waterproof cover to be used in wet weather, or a campaign hat, should be adopted for the use of enlisted men in place of the cap, which seldom lasts long and is usually crushed out of shape when issued.

A poncho, which could also be used as a shelter half in the field, should be issued in place of the present rain cape, and the red blankets should be called in or sold and khaki blankets issued to all companies.

An attachment should be placed on the bottom of the haversack to permit running the strap through and keeping it in place without wearing out the haversack. The haversack flap should be made wider and lined with some waterproof material to prevent the ration carried by the men, which principally consists of rice, getting wet.

It is also recommended that a suspender, which could be made so it could be attached to the present ammunition belt, be issued for use in the field, as it would enable the belt to be worn loose and afford much more comfort to the men.

It might be remarked that the last issue of shoes, which are broad and flexible, are reported to be the best ever issued to the men.

The issue of two or three waterproof carriers for rice, to carry at least 40 pounds, to each company would, it is thought, prove of great advantage in the field.

The issue of gun wicks to enlisted men for cleaning the barrels of their carbines is also recommended if same can be purchased at a reasonable price, as the use of the present steel rod is considered pernicious.

RECORDS.

A board of officers has recently been convened to look into and recommend the simplification of our present system of records. It is to be regretted that some such action was not possible earlier. The recent remark contained in a circular issued by the director, fourth district, to the effect that he found that officers in taking over new stations found little or no information on file left by their predecessors, and that much valuable information which it is the duty of officers to collect and keep on file is thus lost to the government and can not easily be replaced, might be made to apply with equal truth to every district in which the writer has served.

It is urgently recommended that a thorough, concise, and simple method of recording be adopted throughout our organization, which will insure in future

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that all information obtained by any station commander shall continue to be available for his successor and his senior inspector. Once such system is adopted it is believed that it should be thoroughly taught each officer at the constabulary school, and that no officer who was found incapable of keeping such record in a lucid and satisfactory manner should be placed in charge of a station or given further promotion.

The next best thing to having a competent officer continue to serve in the same locality indefinitely is to have all knowledge obtained by such officer of the people, conditions, and locality recorded in such manner as to be easily assimilated or referred to by his successor, who will not then be handicapped by having to gain for himself information which it may have taken his predecessor months, if not years, to obtain.

BARRACKS AND QUARTERS.

The present barracks occupied by the company stationed at Davao are of nipa, the property of the military, and are hardly worth repair. A suitable site for a constabulary reservation can, it is believed, be secured, and it is recommended that permanent quarters for a senior inspector and one-company post be erected as soon as funds are available.

An expenditure of ₱8,000 has recently been authorized for the erection of permanent quarters at Cotabato. This should put Cotabato in good shape.

At Bongao the buildings at present occupied by the constabulary belong to the military. One of them, the old barracks, is in such bad shape that it is not believed to be worth while to have same repaired. When these buildings were turned over by the military it was understood that they would be kept in repair by the constabulary; however, as none of the buildings are permanent structures and have been occupied and kept in repair by the constabulary for the past four years, it is not believed that such a condition should be considered permanent, and it is intended to ask the military to have an inspector act on such buildings with a view to their being dropped from the papers of the responsible quartermaster.

At Cagayan the only available building for quarters for enlisted men is situated in the heart of the town and is very unsatisfactory. If the constabulary is to remain there, they should build and own their own quarters. The dispensary and hospital at Cagayan, as at present located on the ground floor of the house occupied as quarters and office by the senior inspector and surgeon, is decidedly unsatisfactory. A separate building should be erected or rented to enable the proper treatment of all cases and the isolation of men suffering from beriberi and other infectious complaints.

At Surigao the two buildings used as office and cuartel have never had their title properly determined. The building used as office and storeroom is believed to be provincial government property and is rented for ₱40. The building used as barracks is probably insular government property. However, the provincial government claims it and title for same has never been decided. It is very desirable that this matter be decided at an early date, as it is impossible to make any repairs or alterations under present conditions.

In Lanao the constabulary, both officers and men, have been housed worse than any constabulary in the district or, it is believed, in the islands, where there has been a permanent station. Temporary officers' quarters have recently been erected at Dansalan for ₱700. The building at present used as a cuartel for the enlisted men is of nipa and bamboo, and can hardly last, even if repaired, more than another nine months. It is recommended that authority to expend ₱20,000 in the erection of quarters for two companies, officers' quarters, offices, and storerooms, be authorized as soon as funds are available.

It is also recommended that a small building be erected on the constabulary reservation at Zamboanga for use as a dispensary and hospital, capable of accommodating half a dozen patients.

A list of buildings occupied and rents paid will be found in the appendix.[a]

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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TRANSPORTATION.

A tabulated statement of transportation facilities in the district, with remark as to condition of same and transportation required, will be found in the appendix.[a]

Lanao is probably in the hardest fix for transportation, having three companies stationed 23 miles from the nearest port, at a point 2,400 feet above sea level. It is recommended that an escort wagon and six mules be furnished this station as soon as the bridge over the Agus River is completed. At the present time the cost of providing supplies over the road from Iligan to Marahui has averaged over ₱200 per month, and after arrival at Marahui they have to be transferred to Dansalan in vintas, retransferred to bull carts and carried up a steep-grade hill half a mile before they can be finally stored, added to which it is frequently only with the greatest difficulty that the necessary transportation can be hired.

The province of Misamis, which is divided into two sections by Iligan Bay, badly needs a motor sailboat or launch. This subject has been taken up in former reports, and the necessity for water transportation for the senior inspector of this province is, it is believed, well understood.

The necessity for a boat of the *Ranger* type for service in this district is also well understood. The present arrangement whereby a boat is available for fifteen days each month will help considerably, but there can be no question that to run this district properly with the small force at present available and no telegraphic communication with any station in the district, requires a boat at the disposal of the district director the entire month. The district director, while at Zamboanga, is without any means of communication except by mail. A boat that can carry a company of men with their equipment, enough coal to make an inspection trip of the district without recoaling, and of sufficient power to contend with the currents that are encountered, which run 6 or 7 knots an hour, is what is required.

It is also urgently recommended that the present baggage allowance for officers when changing station be increased to 1,000 pounds for junior officers and 1,500 pounds for officers of the grade of captain. At the present time officers either have to live without even the most ordinary conveniences or suffer considerable pecuniary loss whenever they change station.

STRENGTH.

It is understood that every district is at the present time calling for more officers and men, and that such request is not merely received from senior inspectors through their district directors but also from provincial governors who, it is presumed, are naturally anxious to run their provinces with as few constabulary as possible.

The governor of Moro Province and the district governors under him have requested at least a temporary increase in the number of officers and enlisted men of the constabulary available for service in this district, while the same request is made by the governors of Surigao and Misamis provinces, the governor of Agusan, and the lieutenant-governor of Bukidnon.

It is earnestly recommended that steps be taken to increase the commissioned strength so that, allowing for a certain percentage of officers who will be absent on leave, no company serving by itself in an isolated post will have less than two officers for duty.

The recommendation made in the annual report of the director, fifth district, for the fiscal year 1907, which has been reiterated in various communications since, to the effect that the strength of the constabulary in this district be increased, at least temporarily, by four companies, is again repeated. In this district most of the work of the constabulary is among Moros or non-Christian tribes and it is thought that, considering the fact that they are admittedly uncivilized barbarians who are likely to be unfit for self-government for several years, it should be expected that a stronger armed force will be necessary in handling them and in protecting from the depredations of their neighbors those who recognize the government, obey our laws, and pay taxes, than is required in territory of equal extent elsewhere in the archipelago. It would also appear but just to the Moros and non-Christian tribes and to the

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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best interests of the government not to attempt to establish civil government among them until we are prepared to adequately protect those who recognize our authority and conform to our laws and usages and to arrest and punish those who refuse to recognize such authority. At the present time, while new territory is being opened up in Agusan, Bukidnon, and Davao, and the handling of the turbulent Lake Lanao Moros was almost entirely turned over to the constabulary, no corresponding increase in the strength of the constabulary of the district can be obtained, though there is little doubt that for years to come, as fast as more constabulary are available, they can be used to good effect in this district in opening up new and valuable territory and in helping to bring the Moro and non-Christian to conform to civilized law and customs.

In Lanao at least two more companies above the number at present authorized should be available. At the present time one general-service company from Manila is on detached service in Lanao, but if the constabulary are going to attempt to even maintain their present work, two more companies, making five in all, should be available in this district for the next six months. The first and second Lanao have without doubt had the hardest field service in the district, if not in the whole archipelago, for the past year, with little or no relaxation and a somewhat high percentage of casualties. They have had the poorest quarters as well as the hardest service, and although the first and second Lanao probably had the highest percentage of efficient men for field service among the Moro companies in this district, they have almost without exception refused to reenlist. By the end of August these two companies will have about 75 per cent recruits with less than six months' service, the majority with only two or three months, who can hardly be expected to be as efficient as the men discharged for at least another year, if not two. It is believed that had it been possible to relieve the strain on these two companies the majority of the old men would have reenlisted, and as most of them had completed three or more years' service they would have been invaluable to the government and will be hard to replace.

In the district of Zamboanga for some time to come another company should be stationed in Basilan. At present this work has been performed by the Third General Service Company, Philippine Constabulary, who, it is understood, are to be withdrawn as soon as actual field service is over, though it can easily be understood that the presence of a company in a station may frequently be as necessary as the presence of the same number of men in the field, and, in fact, may obviate the necessity later on for the employment of double that number in active field service.

Although the work of the constabulary of this district has increased from year to year since it was first organized, I find by referring to past records that the number of men and officers authorized for the district has not increased in proportion. The authorized strength has either decreased or remained stationary in spite of the fact that the opening up of the province of Agusan and the subprovince of Bukidnon and the interior of Davao and Lanao, not to mention the necessity for stationing two entire companies at the present time in Basilan, has more than trebled the extent of territory in which the constabulary now have to actively operate and opened up possibilities for still further extension of their work. Unless an increase in strength of officers and men is shortly authorized or satisfactory arrangements can be made to temporarily increase such strength, it will without doubt result in the constabulary losing ground, and the non-Christian tribes and Moros, who are at present well disposed toward the government and becoming civilized as rapidly as could be expected, having to return to their former status as savages and barbarians, owing to lack of adequate protection from the depredations of those who have hitherto refused to recognize the authority of the government or to pay taxes, etc.

The records at these headquarters show the following strength, commissioned and enlisted, as being authorized for this district since 1904:

Year.	Officers.	Enlisted.
1904	22	530
1905	36	779
1906	34	635
1907	36	607
1908	37	605

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It should be mentioned that an extra company for service in Surigao is rendered necessary by the opening up of the Agusan Valley, a huge extent of territory which until recently had not been brought under civil government, while the extra company for Misamis is required to assist Lieutenant-Governor Lewis in his work in organizing civil government among the non-Christian tribes of the subprovince of Bukidnon.

It is also recommended that companies be numbered serially, as are the scout organizations, to eliminate the confusion which is apt to arise where, for example, the First Zamboanga is transferred for station to Davao, and the First Davao for station in Zamboanga.

CONCLUSION.

The caliber of our officers has admittedly improved within the last few years, it might almost be said in proportion as the pay and conditions of the service have improved, and the difficulty that now confronts our organization is to retain the competent men in the service after they have completed two or three years' service. It is not thought that further increase in pay alone will have the desired effect, but the certainty of pension and retirement, optional after fifteen years' service and compulsory after twenty years, with pension on half pay for compulsory retirement for disability incurred in line of duty, would, it is believed, solve the question.

The efficiency of the enlisted force will always keep pace with and depend to a large extent upon the grade of officer commanding them, and the efficiency of an officer, provided he is of the right material, will, in the long run, depend to a large extent upon his knowledge of conditions and manner of handling his men, which can only be gained after several years' service.

As a general rule, the kind of officer it is desirable to retain in the service is the kind of man who would make a success in civil life or gain a commission in the military service when he first enters the constabulary, but who, if he gives his whole time and attention to his duties as a constabulary officer, is for every year's service over here severely handicapped should he return to the States and compete again in civil life, and quickly becomes too old to gain a commission in the regular service.

It is felt that unless some action is taken shortly which will place beyond all shadow of doubt the permanency of our organization and the certainty of pension and retirement after a given number of years' service, within the next two years the majority of our older and more experienced officers and all junior officers who are capable of earning a decent living in civil life will quit the service.

The further efficiency of our officers would be considerably increased if senior officers would only try to encourage an esprit de corps, which will be found to be chiefly noticeable by its absence among the junior officers, due, it is believed, partly to the uncertainty as to the future of our organization, partly to lack of appreciation of the importance of constabulary work, and an idea that it is the duty each officer owes to himself to save every cent possible with a view to quitting the service as soon as he sees a better opening, from a pecuniary point of view, in civil life. It is also partly due to lack of encouragement from some of the senior officers, who fail to appreciate the point of view of their juniors who have to decide whether it is worth while to spend the best years of their life in a service which, however honorable and interesting, makes no adequate provision for retirement for old age or disability. There also appears to be an erroneous idea prevalent among some of our officers that a man's standing in life should be judged by the amount of pay he receives, rather than the work he performs, and hence the constabulary officer naturally suffers in his own estimation, and possibly that of others, when his pay is compared with that of army officers, whether of the regular or scout organizations, who may be doing less important work with fewer hardships.

It will, I think, be generally admitted that the natives outside the large towns are liable to judge the average American to a great extent from their knowledge of the character and personality of the nearest constabulary officer, and the government gains or loses the respect of the natives to a great extent in proportion to the respect its officers are able to inspire in them. If this is approximately correct elsewhere in these islands, it is a hundred per cent more so when such official has relations with Moros or non-Christian tribes. It is believed successful work in an isolated constabulary post requires men of high caliber, who have a right to feel a pride in their work and

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the corps they belong to if for no other reason than that they are inadequately recompensed while giving the government the best years of their life, and every encouragement should be given to junior officers to feel that their work and responsibilities are so appreciated by their seniors.[a]

Respectfully submitted.

E. W. GRIFFITH, *District Director.*

The EXECUTIVE INSPECTOR, BUREAU OF CONSTABULARY,
Manila, P. I.

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[a]An appendix to this report containing the following information has been omitted and filed in the Bureau of Insular Affairs, War Department:

Officers and companies serving in the fifth district, with stations and enlisted strength.

Junior officers who have served in this district during the fiscal year.

Officers assigned to or relieved from fifth district.

Strength, pay, and arms of municipal police, by provinces.

Casualties, by companies.

Arms captured, expeditions, outlaws killed, etc.

Buildings occupied and rent paid.

Means of transportation.

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EXHIBIT B.

REPORT OF THE SUPERVISING RAILWAY EXPERT.

OFFICE OF THE SUPERVISING RAILWAY EXPERT,
Manila, P. I., August 6, 1908.

SIR: I have the honor to submit my annual report of the work of this office for the year ended June 30, 1908, together with statistics in relation to the construction and operation of railroads in the Philippine Islands.

ORGANIZATION OF THE OFFICE.

The staff at the end of the fiscal year, in addition to the chief of the office, consisted of a chief clerk, stenographer, messenger, and two inspecting engineers, one on the island of Cebu and one on Panay.

WORK OF OFFICE AND FIELD FORCE.

The work of the office and field force, as during the previous year, consisted largely of investigations on the ground of the various lines of railroad authorized by Acts Nos. 1448, 1497, and 1510, in connection with the examination of maps and profiles of these lines in the office.

A regular field force, consisting of one inspecting engineer on each of the islands of Cebu and Panay, for the inspection of the construction work being done by the Philippine Railway Company under Act No. 1497 was maintained.

LEGISLATIVE OR ADMINISTRATIVE ACTS DURING THE YEAR RELATING TO OR AFFECTING RAILROADS.

A full legislative or corporate history of the railroad transportation companies of the islands in process of construction or under operation was given in the previous annual report of this office, and only additional acts or actions taken are enumerated below.

LEPANTO MINING COMPANY.

By Act No. 1700, of August 30, 1907, the Lepanto Mining Company was granted a fifty-year franchise for the construction of a highway extending from a point on the Abra River, near Comillas, province of Lepanto-Bontoc, westerly to the China Sea, near the town of Bangar, province of La Union.

Under subsection (1) of section 2 of the said act the corporation was authorized to construct a railroad operated by steam, electricity, or other motive power on said road, provided the grantee organizes a railroad corporation for that purpose.

No railroad corporation has been organized under this act and it is assumed that the construction of the railroad line has been deferred.

MANILA RAILROAD COMPANY.

By Act No. 1714, of September 18, 1907, subsection (d) of section 1 of Act No. 1510 was amended to authorize the Manila Railroad Company to change the location of its proposed lines in the provinces of Albay and Ambos Camarines, and said subsection was changed to read as follows:

"(d) A concession for a line from Nueva Caceres to Tabaco by way of Legaspi, an estimated distance of 80 miles; and for branches from such line from Pili to Lagonoy, an estimted distance of 31 miles, and from Ligao toward

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Tabaco, an estimated distance of 4 miles, and from Tabaco toward Ligao, an estimated distance of 4 miles, and from Nueva Caceres, in either a northerly or westerly direction as may be determined by the governor-general, a further distance of 7 miles, with the right, at the option of the grantee, of extending said line to a point on the west coast of the island of Luzon to be approved by the governor-general."

a total distance of approximately 224 kilometers.

This act was approved by the Secretary of War on January 8, 1908, and the Manila Railroad Company filed with the executive secretary on May 9, 1908, its acceptance of Act No. 1510 as amended by Act No. 1714.

The object of the change in said subsection was to avoid some very heavy construction work and grades on a through line from Ligao to Tabaco, while serving a much larger population in the revised location.

Adam C. Derkum, on January 30, 1907, and the Manila Railway Company (Limited), on March 25, 1907, having applied to the Philippine government for a franchise for the construction of a railroad line between San Fernando and Arayat, in the Province of Pampanga, a distance of approximately 14.5 kilometers (actually 20 kilometers), over substantially the same route, the Philippine Commission, by resolution of August 5, 1907, authorized the secretary of commerce and police to advertise for bids for a concession for the construction of said line.

The Manila Railroad Company being the only bidder, the concession was awarded to it by the governor-general on October 12, 1907, under paragraph 1 of section 1 of Act No. 1510, which award was approved by the Secretary of War on the same date and accepted by the Manila Railroad Company on November 11, 1907.

Under subsection 1 of section 1 of Act No. 1510, with extensions granted by the governor-general, the Manila Railroad Company was required to submit to the governor-general for approval final plans of the location of the lines covered by its concession on or before September 12, 1908. As, however, no useful purpose could be served in locating lines the construction of which could not be undertaken for a year or more, the governor-general, on June 10, 1908, on application of the railroad company made May 27, 1908, extended the time for filing final plans to September 12, 1909, with the proviso that this should not be construed as extending the time for the completion of the various lines beyond the year 1913, as required by the concession.

MANILA SUBURBAN RAILWAYS COMPANY.

By Act No. 1762, of October 11, 1907, the Philippine Commission fixed the sections into which the Manila Suburban (Electric) Railways Company should divide its line and also fixed the charge for carrying passengers on each of the sections authorized. The conditions of said act were accepted by the railways company on December 9, 1907.

THE PHILIPPINE RAILWAY COMPANY.

Under Act No. 1497 and modifications thereof made by the governor-general under said act, the Philippine Railway Company was required to present final plans of the location of its lines on August 14, 1907, but on application being made by this company the Philippine Commission, by resolution of August 26, 1907, extended the time for filing plans on the island of Cebu to September 30, 1907; for the lines on Negros from Escalante to Saravia to February 14, 1908; and for the remainder of the line on Negros and the line on Panay to December 14, 1907, with the proviso that the time so extended should not be construed as extending the time for the completion of the various lines.

Under the above act the Philippine Railway Company was to have the first 100 miles of its line completed on March 14, 1908. As, however, for various reasons this could not be done, application was made on November 12, 1907, for an extension of six months of the time of completion of the first and second hundred miles. This extension of time was granted by the governor-general under subsection 3 of section 1 of Act No. 1497 on May 5, 1908, thus authorizing the completion of the first hundred miles on September 14, 1908, and the second hundred miles on September 14, 1909.

On further application being made by the railway company on May 25, 1908, the governor-general, on June 5, 1908, by the authority above referred to,

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granted a further extension of time for the completion of the second hundred miles of six months, or until March 14, 1910.

Owing to labor difficulties and other reasons, it is hardly probable that the first hundred miles will be completed within the time authorized, and without doubt a further extension of time for the completion of the second hundred miles will be necessary.

INSULAR COAL COMPANY.

By Act No. 1835 of May 21, 1908, the Philippine Legislature granted authority to the Insular Coal Company, a corporation of the State of New York, to construct, equip, maintain, and operate for a period of fifty years from the date of the passage of the act, a railway line from the shore line at the port of Danao, municipality of Danao, province of Cebu, to a point in the coal district of Camansi, a distance of 12 kilometers.

In general the wording of this act follows that of the corporation act (Act No. 1459 of March 1, 1906), as applicable to railroad corporations, except that the Insular Coal Company is not authorized to render any service to the public on said railway, and the line will be used for the purposes of hauling the product of the coal mines owned by this company to water transportation at Danao.

The railroad line covered by the act was constructed in Spanish times and the act was passed merely to secure the Insular Coal Company in its rights to occupy and use the track for the purposes mentioned.

RAILROAD TO BAGUIO.

The Philippine Commission, by Act No. 1735 of October 2, 1907, granted authority for the location, construction, equipment, maintenance, and operation of a railway from Manila, or from any point on an already existing or authorized railway, to Baguio, in the province of Benguet; and the governor-general was authorized to execute a concessionary grant or contract in a form set out in said act covering the construction of said railway. The form of contract outlined is practically identical with Act No. 1497, the Philippine railway act, the only essential differences being that in addition to guaranteeing interest for thirty years on bonds which may be issued in the construction of the line, the Philippine government will also guarantee a minimum annual gross business for the railway, not to exceed ₱100,000, for a period of fifteen years from the date of the execution of the concessionary grant. In addition to this the grantee is to be authorized to make use of the water power from the Bued and Agno rivers or their tributaries.

The authority of the governor-general to execute the proposed concessionary grant or contract expires three years from the date of passage of the act, or on October 2, 1910.

Negotiations looking toward the construction of this line are being made and will no doubt prove successful.

BOARD OF RATE REGULATION.

By Act No. 1779 of October 12, 1907, the Philippine Commission created a board, known as the "board of rate regulation," for the regulation of rates chargeable by public-service corporations.

The powers given to the board under this act are similar to those conferred on the Interstate Commerce Commission by Congress.

But few matters have been called to the attention of the board, and such as have come to its notice can be satisfactorily adjusted.

Below is a report of the work of construction, operation, and maintenance of the railroads of the Philippine Islands, together with various statistics in relation thereto.

MANILA RAILROAD COMPANY.

CONSTRUCTION.

The construction of the lines of this company under Act No. 1510, after adding to the lines originally covered by said act, the increased kilometerage covered by Act No. 1714, the San Fernando-Arayat line and various port lines, military camp lines, and wyes, amounting in total to 790 kilometers, has progressed rapidly and satisfactorily, and during the fiscal year 166 kilometers of grading were completed, 147 kilometers of track laid, and 137 kilometers of line put in operation.

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In detail, on the various lines covered by Act No. 1510 and modifications thereof, the results from the beginning of the work to June 30, 1908, are as follows:

DAGUPAN-SAN FERNANDO LINE.

[Port Line, San Fernando.]

	Kilometers.
Total length of line	73.8
Location completed	73.8
Plans presented to government for approval	73.8
Location approved by governor-general	73.8
Grading completed	36
Track laid	29
Line opened Dagupan to San Fabian, January 11, 1908	12.2

CAMP ONE LINE.

Total length of line (more or less)	20.5
Surveys completed	19.4
Plans presented for approval of government	19.4
Location approved by governor-general	19.4
Grading completed	19.4
Track laid	19.4
Line opened San Fabian to Camp One, March 23, 1908	19.4

PANIQUI-TAYUG LINE.

Total length of line	48.7
Survey completed	35
Plans presented for approval of government	30
Location approved by governor-general	15
Grading completed	21
Track completed	15
Line opened Paniqui to Cuyapo, June 30, 1908	15

SAN MIGUEL-LA PAZ LINE.

Total length of line	18.4
Survey completed	18.4
Plans presented for approval of government	18.4
Location approved by governor-general	None.

No work other than surveying has been done on this line.

DAU-MAGALANG LINE.

Total length of line	9

The work on this line is entirely completed and it was opened for operation on December 20, 1907.

SAN FERNANDO-FLORIDA BLANCA LINE.

	Kilometers.
Total length of line	24.5

This line is completed and in operation. It was opened, San Fernando to Guagua, 10.4 kilometers, on November 12, 1907; Guagua to Lubao, 5.6 kilometers, on January 27, 1908; and Lubao to Florida Blanca, 8.5 kilometers, on April 10, 1908.

SAN FERNANDO-ARAYAT LINE.

	Kilometers.
Total length of line	20
Survey completed	20
Plans presented to government for approval	20
Location approved by governor-general	None.

No work other than surveys has been done on this line.

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MARIQUINA-MONTALBON LINE.

	Kilometers.
Total length of line	12.9

This line is completed and was put in operation during the previous fiscal year, April 17, 1907.

ANTIPOLO LINE.

	Kilometers.
Total length of line covered by Act No. 1510	9.4
Survey completed	9.4
Plans presented to government for approval	9.4
Location approved by governor-general	None.
Grading completed	9
Track laid	6
Line opened	None.

MANILA-BATANGAS LINE.

[Batangas to Bauan; Port Line, Batangas; Camp McGrath Spur.]

	Kilometers.
Total length of lines	112.3
Surveys completed	102.6
Plans presented to government for approval	102.6
Location approved by governor-general	102.6
Grading completed	86
Track laid	25
Line opened Paco to Muntinlupa June 21, 1908	22.3

BELT LINE, MANILA.

	Kilometers.
Total length of line (3 kilometers double track)	9.6
Survey completed	9.6
Plans presented to government for approval	9.6
Location approved by governor-general	9.6
Grading completed	9.6
Track laid (double and single track)	9.6
Line opened (single track) March 25, 1908	3

MANILA-CAVITE LINE.

[Wyes at Binacayan.]

	Kilometers.
Total length of line	32.7
Survey completed	32.2
Plans presented to government for approval	32.2
Location approved by governor-general	32.2
Grading completed	32
Track laid	32
Line opened	32

	Kilometers.
Paco to Binacayan, March 25, 1908	19.6
Binacayan to Caridad, May 11, 1908	9.4
Caridad to San Roque, May 24, 1908	3

IMUS LOOP.

	Kilometers.
Total length of line	15.9

Survey was made and plans presented for approval of the government, but on account of some objections to the location plans were returned and nothing further has been done.

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NAIC LINE.

[Wyes at Noveleta.]

	Kilometers.
Total length of line	19.9
Survey completed	19.9
Plans presented for approval of government	19.9
Location approved by governor-general	19.9
Grading completed	12
Track laid	None.
Line opened	None.

CALAMBA-SANTA CRUZ-MAGDALENA LINE.

	Kilometers.
Total length of line	48.3
Survey completed	15
Plans presented for approval of government	9
Location approved by governor-general	9
Grading completed	None.
Track laid	None.
Line opened	None.

SANTO TOMAS (LUTA)-LUCENA LINE.

[Lucena-Pagbilao Line.]

	Kilometers.
Total length of line	74.5
Survey completed	63.2
Plans presented for approval of government	63.2
Location approved by governor-general	63.2
Grading completed	9.5
Track laid	None.
Line opened	None.

LEGASPI-CAIMA BAY LINE.

[Legaspi to Tabaco, Legaspi Port Line, Tabaco Port Line, Ligao East, Tabaco West, Pili to Lagonoy.]

	Kilometers.
Total length of line	240.5
Survey completed	85
Plans presented for approval of government	80.9
Location approved by governor-general	19
Grading completed	13.7
Track laid	1
Line opened	None.

GENERAL COMMENT.

Act No. 1510 required the Manila Railroad Company to have 240 kilometers of line completed on September 12, 1909. It will be noted from the above that on June 30, 1908, the company had 183 kilometers of track laid, with fourteen and one-half months to complete the remainder, 57 kilometers; 150 kilometers in operation, with the grading and location of lines well in advance of any requirements.

The effect of the new lines is already in evidence from the fact that land which has lain fallow for a number of years is now being cultivated.

It seems worthy of note here that the line of this road from Dagupan to the provisional terminal at Camp One was completed in season for the handling of traffic to Baguio during the session of the Philippine Commission last spring.

The Manila Railroad Company is constructing a suspension bridge across the Bued River in order to provide communication during the rainy season from its terminal to the Benguet road.

Another event of importance was the completion of this company's bridge across the Pasig River in March, 1908, thus permitting trains to run south of Manila for the first time.

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OPERATION AND MAINTENANCE.

The results of the operation and maintenance of this line for the year ended December 31, 1907, compared with the previous year, with various statistics in relation thereto are given below:

LENGTH OF LINES.

Territory covered.	1906.			1907.		
	Main line.	Sidings.[a]	Total.[a]	Main line.	Sidings.	Total.
	Kilos.	*Kilos.*	*Kilos.*	*Kilos.*	*Kilos.*	*Kilos.*
Main line, Manila to Dagupan	196	.....	.....	196	40.7	236.7
Cabanatuan branch, Bigaa to Cabanatuan	91	.....	.....	91	8	99
Antipolo branch, Manila to Taytay	29	.....	.....	24.8	4	45.8
Mariquina branch, Rosario to Montalban	.....	.....	.....	17.5	.....	.....
Stotsenberg branch, Dau to Stotsenberg	7	.....	.....	7	.8	7.8
Dau-San Pedro-Magalang	.....	.....	.....	9	(a)	9
San Fernando-Florida Blanca branch, San Fernando to Guagua	.....	.....	.....	10.4	(a)	10.4
Total	323	.....	.....	355.2	53.5	408.7

[a] Not given.

The increase in length of line laid during the year 1907, as compared with 1906, was 32.2 kilometers. Rail was relaid on 10 kilometers of main line, 29.5-kilogram rail replacing 21-kilogram rail. Ten steel bridge spans 20 meters long each were constructed during the year on the Mariquina branch, replacing temporary structures, and the operated mileage has been kept in excellent condition.

The average length of line during the year 1907 was 337 kilometers.

The operating revenue was as follows:

REVENUE FROM TRANSPORTATION.

	1906.	1907.	Decrease.	Increase.
Freight revenue	₱747,713.75	₱820,476.17	.....	₱72,762.42
Passenger revenue	1,132,755.14	1,331,245.48	.....	198,490.34
Mail revenue	4,513.48	7,623.63	.....	3,110.15
Government transportation	121,293.56	(a)	₱121,293.56	.....
Total	2,006,275.93	2,159,345.28	.....	153,069.35

[a] Included in freight and passenger above.

REVENUE FROM OPERATION OTHER THAN TRANSPORTATION.

	1906.	1907.	Decrease.	Increase.
Station and train privileges	(a)	₱3,599.21	.....	₱3,599.21
Switching revenue	₱23,999.22	(b)	₱23,999.22	.....
Storage of baggage freight	49.14	1,478.21	.....	1,429.07
Rent of buildings and property	7,750.76	15,110.27	.....	7,359.51
Total	31,799.12	20,187.69	11,611.43	.....

[a] In passenger revenue. [b] In freight revenue.

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OPERATING EXPENSES.

	1906.	1907.	Decrease.	Increase.
Administration	₱94,840.85	₱96,796.11		₱1,955.76
Traffic	252,341.86	237,775.81	₱14,566.05	
Maintenance of equipment	296,360.61	369,958.20		73,597.59
Maintenance of way and structures	253,685.93	292,464.91		38,778.98
Total	897,228.75	996,995.03		99,766.28

RECAPITULATION.

	1906.	1907.	Decrease.	Increase.
Total operating revenue	₱2,038,075.05	₱2,179,532.97		₱141,457.92
Total operating expenses	897,228.75	996,995.03		99,766.28
Net operating revenue	1,140,846.30	1,182,537.94		41,691.64
Percentage of operating expenses to operating revenue	44	45.7		1.7
Taxes	₱12,905.47	₱4,726.72	₱8,178.75	
Net operating revenue	₱1,140,846.30	₱1,182,537.94		₱41,691.64
Less taxes	12,905.47	4,726.72	₱8,178.75	
Operating income	1,127,940.83	1,177,811.22		49,870.39

	1906.	1907.	Decrease.	Increase.
Passenger revenue per train kilometer	₱2.0922	₱1.802	₱0.2902	
Freight revenue per train kilometer	2.7318	1.736	.9958	
Total revenue per train kilometer	2.2310	1.909	.322	
Operating expense per train kilometer	.9148	.877	.0378	
Net income per train kilometer	1.3162	1.032	.2842	
Passenger revenue per kilometer of line	3,579.00	3,972.91		₱393.91
Freight revenue per kilometer of line	2,790.00	2,434.64	355.36	
Miscellaneous revenue per kilometer of line	(a)	59.91		59.91
Total revenue per kilometer of line	6,369.00	6,467.46		98.46
Operating expenses per kilometer of line	2,804.00	2,958.34		154.34
Net operating income per kilometer of line	3,565.00	3,509.12	55.88	
Average amount received per kilometer per passenger	.0209	.0176	.0033	
Average amount received per each passenger	.6287	.4988	.1299	
Average amount received per ton of freight per kilometer	(b)	.0329		
Average amount received per each ton of freight	2.4838	2.4625	.0213	
Average haul per passenger ..... kilometers	30.06	28.00	2.06	
Average haul per ton freight ..... do	81.65	77.00	4.65	
Passengers hauled 1 kilometer ..... number	41,119,565	69,797,436		28,677,871
Metric tons of freight hauled 1 kilometer ..... tons	19,842,832	24,054,286		4,211,454

a Included in above. b Not given.

The equipment of this line consisted of:

	1906.	1907.	Decrease.	Increase.
Passenger engines	17	58		23
Freight engines	18			
First and second class passenger cars	19	25		6
Second-class passenger cars	10	10		
Third class passenger cars	60	77		17
Inspection cars	1	2		1
Freight cars	717	908		191
Miscellaneous cars	45	52		7

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Accidents during the year were: 28 Class A, serious; 25 Class B, not serious; 111 Class C, minor. No serious train accidents occurred during the year.

NOTE.—The report of the operation of the Manila Railroad Company is for the year ended December 31, 1907.

MANILA ELECTRIC RAILROAD AND LIGHT COMPANY AND MANILA SUBURBAN RAILWAYS COMPANY.

CONSTRUCTION.

The Manila Suburban Railways Company, by Acts Nos. 1446 and 1559 of January 30, 1906, and February 1, 1907, respectively, was required to complete its line from Paco to Pasig, in the province of Rizal, on January 30, 1908. Owing, however, to an unfortunate accident during the erection of its bridge over the Pasig River on October 31, 1907, the completion was delayed.

On January 6, 1908, this line began operation from Fort William McKinley and from Pasig to the Pasig River, passengers being transferred across the river by ferry, and this method continued until June 1, 1908, when the bridge over the river was completed and through cars were run from Manila to Pasig, the full schedule of through cars to Pasig being inaugurated on June 14, 1908.

No work has been done on the line to Taguig and the Laguna de Bay during the fiscal year.

Total amount of completed grading executed by this company during the fiscal year was 0.71 kilometer, and of track completed during the same time 0.93 kilometer.

Following is the result of the operation of these lines during the fiscal years 1907 and 1908:

MANILA ELECTRIC RAILROAD AND LIGHT COMPANY.

	1907.				1908.			
	Main line.	Second track.	Sidings.	Total.	Main line.	Second track.	Sidings.	Total.
Kilometrage	45.4	12.7	6	64.1	39.8	17.2	6.2	63.2

	1907.	1908.
Revenue from transportation	₱967,712.58	₱991,668.31
Revenue from operation other than transportation	45,031.10	68,946.96
Total operating revenue	1,012,743.68	1,060,615.27
Operating expenses:		
(a) Maintenance of way and structures	32,896.26	50,497.60
(b) Maintenance of equipment	71,506.87	90,876.17
(c) and (d) Traffic and transportation expenses	315,729.94	314,162.98
(e) General expenses and taxes	109,193.28	113,862.03
Total operating expenses and taxes	529,326.35	569,398.78
Net operating revenue	483,417.33	491,216.49
Percentage of operating expenses (including taxes) to gross operating revenue	52	53.7

NOTE.—Kilometrage given for fiscal year 1907 was incorrect. Records of this company for this item are not in good shape, and the kilometrage for 1908 is not exact but nearly so.

The following general information is given:

	1907.	1908.
(a) Total number of passengers carried	10,259,297	10,701,859
(b) Average earnings per passenger	₱0.098	₱0.099
(c) Average expense per passenger	0.051	0.053
Equipment:		
Motor cars	111	105
Work cars	1	1
Wrecking cars	1	1
Water sprinkler	.....	1

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MANILA SUBURBAN RAILWAYS COMPANY.

Operation.

	1907.				1908.			
	Main line.	Second track.	Sidings.	Total.	Main line.	Second track.	Sidings.	Total.
Kilometrage	8.5	.....	.....	[a] 8.5	9.9	.....	1.7	11.6

	1907.[b]	1908.
Revenue from transportation	.....	₱157,228.51
Revenue from operation other than transportation	.....	1,204.04
Total operating revenue	.....	158,432.55
Operating expenses:		
(a) Maintenance of way and structures	.....	600.28
(b) Maintenance of equipment	.....	407.40
(c) and (d) Traffic and transportation expenses	.....	59,732.72
(e) General expense and taxes	.....	11,213.90
Total operating expenses and taxes	.....	71,954.30
Net operating revenue	.....	86,478.25
Percentage of operating expenses (including taxes) to gross operating revenue	.....	45.5

[a] In operation two months of the fiscal year.
[b] Not given.

The following general information is given:

	1907.[a]	1908.
(a) Total number of passengers carried	.....	2,087,786
(b) Average earnings per passenger	.....	₱0.075
(c) Average expense per passenger	.....	0.034
(d) Equipment:		
Motor cars	.....	6
Freight cars, motor	.....	3
Flat cars	.....	4

[a] No report.

PHILIPPINE RAILWAY COMPANY.

ISLAND OF CEBU.

Location of line.—Map and profile of the location of this line, extending from near Carcar to Argao, a distance of 31 kilometers, which had not been approved at the end of the last fiscal year, was approved by the governor-general April 27, 1907, and modifications of this and the preceding sections were approved on July 3, 1907, and September 30, 1907.

Grading.—At the end of the fiscal year the grading on this island was practically completed and there had been moved 107,387 cubic meters of solid rock, 124,035 of loose rock, and 559,428 of earth, an average of 8,325 cubic meters per kilometer (17,308 cubic yards per mile).

Track laying.—Track laying of the 95 kilometers of main track on this island was completed May 15, 1908, and, except for a few sidings and yard tracks, this work is entirely completed, unless the railway company should desire to construct the Carcar-Barilli-Dumanjug branch.

General.—The work of ballasting this line has progressed very slowly, owing largely to lack of equipment, but now that track laying has been completed there is no reason why the work of finishing the line can not be systematically undertaken.

The bridge work is well in hand, permanent structures being erected of steel and masonry in all cases, and at the end of the fiscal year was in the neighborhood of 75 per cent complete.

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The building of shop, station, and other buildings of permanent materials, concrete generally, is also well advanced, about 90 per cent of this work being completed at the end of the fiscal year.

Bonds.—Joint certifications made by the insular auditor and the chief of this office to the governor-general of the expenditures of the Philippine Railway Company for the issuance of bonds on the island of Cebu during the fiscal year were as follows:

Date of certification.	First bond section, 32 kilometers.	Second and partial bond sections, 63 kilometers.	Total.
September 3, 1907	$800,000	.....	$800,000
November 30, 1907	173,000	.....	173,000
January 22, 1908	108,000	$464,000	572,000
April 18, 1908	67,000	185,000	252,000
May 28, 1908	172,000	442,000	614,000
Total	1,320,000	1,091,000	2,411,000

The above values are in United States currency. To the end of the fiscal year, therefore, the 95 kilometers (59.4 miles) on Cebu have cost ₱50,760 per kilometer, or $40,600 per mile.

ISLAND OF PANAY.

Location of line.—On July 24, 1907, the governor-general approved the location of this line from kilometer 32, near Pototan, to kilometer 72, near Dumarao; on June 26, 1908, the line from kilometer 72 to kilometer 112, near Batan; on March 26, 1908, the line from kilometer 89 at Dao to kilometer 105.7 at Capiz, leaving but little more than the terminal at Batan to be presented and approved.

Grading.—At the end of the fiscal year 47 kilometers of grade were completed from Iloilo north, with about 60 per cent of the grading completed from kilometer 47 to kilometer 64, between Passi and Dumarao.

On the first 32 kilometers (20 miles) there were moved approximately no cubic meters of solid rock, 50,887 cubic meters of loose rock, and 278,310 of earth, or about 10,287 cubic meters per kilometer (21,389 cubic yards per mile).

Track laying.—At the end of the fiscal year there were on this island 45.4 kilometers of track laid, 32 kilometers of which were in operation, leaving about 116 kilometers yet to lay.

General.—The work of ballasting on this island and of finishing up the track, as on Cebu, has gone along slowly for the same reason, and there is little prospect of improvement unless more cars, which are now expected to arrive, are put in the ballast service and more effort is made to finish up the track as it is laid, while still keeping up with the track laying.

Bridging and building work, using permanent materials, has progressed satisfactorily. A number of small openings of concrete have been completed and substructures for the larger openings are well under way. It is expected to begin the erection of the iron bridge work at an early date.

The shop buildings at Lapus Lapus (Iloilo) and the station buildings along the operated line are nearing completion and are being used to some extent.

Bonds.—Joint certification made by the insular auditor and the chief of this office to the governor-general of the expenditures of the Philippine Railway Company for the issuance of bonds on the island of Panay during the fiscal year follows:

Date of certification.	First bond section, 32 kilometers.
March 10, 1908	$881,000
April 18, 1908	201,000
May 28, 1908	277,000
Total	1,359,000

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The above values are in United States currency. To the end of the fiscal year, therefore, the 32 kilometers on which bonds have been certified have cost ₱84,940 per kilometer ($67,950 per mile).

The excessive cost is accounted for largely by reason of the shop buildings and yard at Lapus Lapus.

ISLAND OF NEGROS.

Location of line.—Map and profile of the location of the larger part of this line from Saravia to Cabancalan were approved by the governor-general on March 26, 1908.

Only preliminary surveys have been made for the remainder of the line on this island from Escalante to Saravia, and as the results thereof, with investigations into the probable traffic of the line, showed such discouraging figures, application was made by the Philippine Railway Company to the government in November, 1907, for the abandonment of this part of the line and the matter is now under consideration.

Act No. 1497 located the southern terminus of the Negros line at Himamaylan. As it seemed advantageous to extend this line about 13 kilometers farther south to Cabancalan, the plan was approved by the governor-general on the date above mentioned under subsection 1 of section 1 of Act No. 1497.

General.—The work of construction of the Negros line had not been begun at the end of the fiscal year, but it is expected to be at the beginning of the next dry season.

Total amount of completed grading done by the Philippine Railway Company during the fiscal year was 68 kilometers, and of track laid during the same period 119.5 kilometers.

OPERATION.

The Philippine Railway Company had in operation on June 30, 1908, 127 kilometers of line, 95 of which is on the island of Cebu and 32 on the island of Panay.

This company's lines are certified for operation in sections of 32 kilometers (20 miles), in accordance with Act No. 1497, or in fractions thereof, in accordance with a resolution of the Philippine Commission of August 19, 1907.

The two 32 kilometer sections and a partial section on the island of Cebu were certified by this office as preliminarily completed, in accordance with a resolution of the Philippine Commission of February 4, 1907, and ready for commercial operation as follows:

Line covered, island of Cebu.	Certified as preliminarily completed.	Opened for business.
First section, extending 8 kilometers south and 24 kilometers north of the town of Cebu	Sept, 16, 1907	Sept. 16, 1907
Second section, extending from a point 24 kilometers north of the town of Cebu to the town of Danao, 7.5 kilometers, and from a point 8 kilometers south of the town of Cebu to a point 32.5 kilometers south of said town	Jan. 23, 1908	Jan. 20, 1908
A partial section, extending from a point 32.5 kilometers south of the town of Cebu to Argao, a distance of 31 kilometers	May 28, 1908	June 1, 1908

On the island of Panay, where only one section is in operation, certification was made under the same authorizations as Cebu.

Line covered.	Certified as preliminarily completed.	Opened for business.
First section, extending from Lapus Lapus (Iloilo) to a point 32 kilometers north of said Lapus Lapus	Mar. 10, 1908	Mar. 5, 1908

As the lines of this railway under operation are only partially completed, and as there is yet a considerable amount of construction work to be done on them, the cost of operation is charged and the earnings therefrom are credited to the construction account, in accordance with Act No. 1497.

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The record kept of the cost of and earnings from operation indicate that they nearly balance, but it is hoped that with suitable and efficient equipment, which the railway has lacked during the fiscal year, the operating results will be more satisfactory.

The desirability of finally completing the line on Cebu, part of which has been in operation ten months, and of closing up the construction account has been urged on the railway company, and it is expected that this will be done in the near future.

No detailed report of the operations of this line for the fiscal year has been received.

TARLAC RAILWAY COMPANY.

CONSTRUCTION.

This 1.07-meter gauge line, existing by virtue of Act No. 1448 of February 1, 1906, which was 90 per cent finished at the end of the last fiscal year, was shortly thereafter completed and put in operation on December 1, 1907.

Completed grading and track laying done by this company during the fiscal year was 2 kilometers.

OPERATION.

Under a contract between this company and the Manila Railroad Company, the latter furnishes the rolling equipment and operates the Tarlac Railway, the Tarlac Railway Company maintaining the line, and the gross earnings being divided equally between the two companies.

The results of operation for the seven months of the fiscal year during which the line was working are given below.

KILOMETRAGE IN OPERATION.

Line.	1908.
Paniqui to Camiling	20.58

Average kilometrage during the year was 12 kilometers.

REVENUE FROM TRANSPORTATION AND OPERATION OTHER THAN TRANSPORTATION.

Item.	1908.
Freight, passenger, mail, and miscellaneous revenue	₱23,057.98

OPERATING EXPENSES.

Item.	1908.
Paid Manila Railroad Company for operation, as per contract	₱11,528.99
Maintenance of way and structures	4,218.08
Total operating expense	15,747.07
Total operating revenue	23,057.98
Total operating expense	15,747.07
Net operating revenue	7,310.91
Percentage of operating expense to operating revenue	68.3
Net operating revenue	₱7,310.91
Taxes	339.80
Operating income	6,971.11

This company owns no equipment, and no accidents were reported.

The line has been maintained in fair condition during the year.

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DAET TRAMWAY COMPANY.

OPERATION.

No report of the results of the operation of this 0.91-meter gauge tramway, 7.24 kilometers long, constructed under Act No. 1111 of April 8, 1904, has been received by this office.

No road was constructed by this company during the year.

SUMMARY.

A summary of the grading and track laying completed, with the lines put in operation during the fiscal year by the various rail transportation companies in the Philippine Islands, follows:

Road.	Grading completed.	Track laid.	Lines opened.
	Kilos.	*Kilos.*	*Kilos.*
Manila Railroad Company	166.2	147.1	137.4
Manila Electric Railroad and Light Company	.....	.....	.....
Manila Suburban Railways Company	0.7	0.9	1.4
Tarlac Railway Company	2	2	20.6
Daet Tramway Company	.....	.....	.....
Philippine Railway Company	68	119.5	127
Total	236.9	269.5	286.4

Below is shown the total main track kilometerage of rail transportation lines in the Philippine Islands, excluding sidings and second track:

Road.	Track laid but not in operation.	In operation.	Total.
	Kilos.	*Kilos.*	*Kilos.*
Manila Railroad Company	33.1	473.3	506.4
Manila Electric Railroad and Light Company	.....	39.8	39.8
Manila Suburban Railways Company	.....	9.9	9.9
Tarlac Railway Company	.....	20.6	20.6
Daet Tramway Company	.....	7.2	7.2
Philippine Railway Company	13.4	127	140.4
Insular Coal Company	.....	12	12
Total	46.5	689.8	736.3

In the table below will be found the total kilometrage of rail transportation lines in the Philippine Islands at the end of the fiscal year, including sidings and second track:

Road.	Main track laid, whether in operation or not.	Side and second track laid.	Total.
	Kilos.	*Kilos.*	*Kilos.*
Manila Railroad Company	506.4	[a] 80.5	[a] 586.9
Manila Electric Railroad and Light Company	39.8	[b] 28.4	[b] 68.2
Manila Suburban Railways Company	9.9	1.7	11.6
Tarlac Railway Company	20.6	(c)	[d] 20.6
Daet Tramway Company	7.2	(c)	[d] 7.2
Philippine Railway Company	140.4	(c)	[d] 140.4
Insular Coal Company	12	(c)	[d] 12
Total	736.3	[d] 105.6	[d] 841.9

[a] 16.6 kilometers of second track.
[b] 17.2 kilometers of second track.
[c] No report received.
[d] Incomplete.

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In the following statement is shown the main line kilometrage of lines which have been constructed, which are under construction, or which have been authorized to be constructed under existing law:

Road.	Authorized.	Constructed. In operation.	Constructed. Not in operation.	To be constructed.
	Kilos.	*Kilos.*	*Kilos.*	*Kilos.*
Manila Railroad Company	1,100	473.3	33.1	593.6
Manila Electric Railroad and Light Company	45	39.8	.....	5.2
Manila Suburban Railways Company	19.9	9.9	.....	10
Tarlac Railway Company	20.6	20.6	.....	.....
Daet Tramway Company	7.2	7.2	.....	.....
Philippine Railway Company	461	127	13.4	320.6
Lepanto Mining Company	42	.....	.....	42
Insular Coal Company	12	12	.....	.....
Total	1,707.7	689.8	46.5	971.4

FINANCIAL STATEMENT.

A statement of the financial operations of this office during the fiscal year is shown below:

Appropriated under Act No. 1679	₱111,500.00	
Credits received through inter-bureau transactions	3,179.81	
Available for expenditure		₱114,679.81
Expenditures:		
Salaries and wages	52,172.94	
Equipment and furniture	775.03	
Supplies and material	239.66	
Per diems and subsistence	654.52	
Transportation of officers, employees, and supplies	8,185.01	
Postage and telegrams	53.64	
Printing and binding	117.18	
Rents	326.52	
Official transportation, Manila	108.00	
Cablegrams	619.89	
Inspection of materials in United States	19,482.73	
Incidental expenses	874.88	
Total expenditures		83,610.00
Balance unexpended reverting to treasury		31,069.81

Of the amount expended ₱60,769.94 are chargeable to the Philippine Railway Company for government supervision in accordance with the provisions of Act No. 1497, and ₱22,840.06 are chargeable to general expense.

Respectfully submitted.

L. F. GOODALE,
Supervising Railway Expert.

The ACTING SECRETARY OF COMMERCE AND POLICE,
Manila, P. I.

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EXHIBIT C.

REPORT OF THE DIRECTOR OF PUBLIC WORKS.

OFFICE OF THE DIRECTOR OF PUBLIC WORKS,
Manila, P. I., August 10, 1908.

SIR: I have the honor to transmit herewith the annual report of the operations of the bureau of public works for the fiscal year ended June 30, 1908.

ROADS AND BRIDGES.

The need of highways has been presented in previous reports. Their construction continues to be the most important work of this bureau and has advanced during the past year mainly under a new policy hereinafter described.

A brief outline follows of the principal acts of the Commission under the provisions of which effective road policies were possible without administrative control by the Commission:

The Philippine road law.—Act No. 1511, dated July 13, 1906, provides for five days' labor of eight hours each, every calendar year, or an optional equivalent cash payment for such labor commuted at a rate varying from 12½ cents to $1 per day, depending upon local rates of labor, and provides for the appointment of a local committee to determine the annual rate deemed equitable for the ensuing year. It provides detailed procedure for the collection of money and the supervision of the labor and for defaults in payments. The following extracts show the local benefits derived under the provisions of this law and the procedure by which it becomes effective:

"SEC. 7. All labor accruing under the provisions of this act, and all money collected by municipal treasurers as the commuted value of the labor herein provided for, shall be expended upon the public highways, bridges, wharves, or trails, within the municipality in which the same accrues and is collected, under the supervision of the municipal president, except as hereinafter provided."

"SEC. 18. This act shall not be effective in any province until it shall have been adopted for that province by a majority vote of those present at an assembly as hereinafter provided."

"Within six months from the passage of this act the provincial board of each province affected by this act shall call an assembly of municipal presidents and councilors for the purpose of voting on the application of the provisions of this act as a whole to the province, and in the event of a majority vote of those present, after adequate discussion, so to apply this act, the same shall become effective on and after the date of its approval by the provincial board. In case the assembly of presidents and councilors fail to vote in the affirmative upon the acceptance of this act the provincial board may at any time after one year call another meeting for the purpose of again voting upon the application of the provisions of this act as a whole."

The inhabitants of all the provinces immediately benefited by the provisions of this law failed to accept them.

An act providing for the establishment and maintenance of toll roads and bridges.—Act No. 1617 was enacted March 20, 1907. The installation of a toll system for maintenance expenses of the road or bridge under the provisions of this act rests upon the provincial board of the province in which said road or bridge is located. The rates fixed are subject to the approval of the governor-general. A few provinces have taken advantage of the provisions of this act and have installed tolls on one road and on a few bridges. The subject of highway tolls is no more popular nor desirable than in the United States.

The double cedula act.—Act No. 1652, enacted May 18, 1907, provides that the provincial board of any province may by resolution increase the cedula or

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poll tax in any year from ₱1 to ₱2 and that one-half of the total tax collected shall be deposited in the road and bridge fund of the province within which such collections are made. The provisions of this act must be accepted annually before October 1. This act is of special importance. Its provisions apply to 31 provinces and it was accepted under the first year of its operation by 27 provinces.

The municipal road law.—Act No. 1653, enacted May 18, 1907, provides for the acceptance of the Philippine road law, Act No. 1511, by any municipality, independent of the action of the provincial boards. Its results are negligible.

Amendment to the internal-revenue law.—Act No. 1695, enacted August 20, 1907, provides for an increase to the road and bridge fund of the province of an additional 10 per cent of the revenues accruing under the internal-revenue law, and an increase of 5 per cent to the maintenance of schools, provided that the provincial board accepts the provisions of Act No. 1652. The provincial road and bridge fund derived under this act was about ₱750,000, or approximately one-half of that derived by the road and bridge fund under the provisions of Act No. 1652 and equal to the maximum derivable from the land tax.

The new road policy.—A new policy has been in effect during the past fiscal year, equal in its possibilities to the good-roads policies of the foremost States, the essential features of which are permanent types of construction for both roadbed and all structures, a rigid, effective, continuous maintenance system, and a control by regulation of practically all funds expended for road purposes. This policy was instituted by the secretary of commerce and police, and it was made possible by the appropriation of ₱500,000, Act No. 1688, under the following restriction: "For the construction, improvement, and, when necessary, for the maintenance of roads and bridges in the provinces, to be allotted in the discretion of the secretary of commerce and police."

By virtue of the discretionary power vested in the secretary of commerce and police he prepared conditions and regulations along the following general lines:

1. The order of importance in road work is maintenance of existing roads and bridges, repair and reconstruction of existing structures, and, if funds are then available, new construction.

2. No province shall participate in the allotment funds which has not accepted the provisions of Act No. 1652.

3. The allotment of funds shall be made in the proportion of the population to the total population of those provinces increasing the cedula tax under the provisions of Act No. 1652.

4. The provinces entitled to allotment funds shall pass a resolution prior to the receipt of the funds, agreeing to certain conditions regarding maintenance of the roads, etc. The following is an extract containing the essential features of the resolution prepared by the secretary of commerce and police:

"*Resolved*, That the provincial board of ——— hereby accepts said allotment of ——— under the following terms and conditions:

"(1) That all of this allotment shall be expended under the direction of the district engineer or of an engineer detailed from the bureau of public works, for the construction and repair of such roads and bridges as shall be selected by the provincial board, with the approval of the director of public works.

"(2) That all roads in this province designated as first-class roads by the director of public works, with the approval of the secretary of commerce and police, shall be maintained under a system of continuing road maintenance to be prescribed by the director of public works, which shall include, among others, the following features:

"(*a*) During those months, not exceeding five months in any one year, which the director of public works shall decide to constitute the wet season, there shall be continually employed an average of at least one caminero for each kilometer of such designated first-class road in this province, and during the remaining months of the year there shall be continuously employed an average of at least one caminero for each 2 kilometers of such designated first-class road.

"(*b*) Within six months after the passage of this resolution there shall be deposited along the line of all such designated first-class roads in this province not less than 50 cubic meters of broken stone for each kilometer of stone-surfaced road, and not less than 40 cubic meters of gravel for each kilometer of gravel-surfaced road. The places and amounts of deposit, the dimensions, kind, and quality of such broken stone and gravel shall be prescribed by the district engineer with the approval of the director of public

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works, and the province shall deposit annually, during each succeeding fiscal year, to replenish the material taken from such deposits, 50 cubic meters of broken stone for each kilometer of stone-surfaced road, and 40 cubic meters of gravel for each kilometer of gravel-surfaced road, or such less amount as may be prescribed by the director of public works upon certification of the district engineer that such less amount is sufficient to provide properly for the maintenance of such designated road during the ensuing year.

"*Resolved further*, That a continuing annual appropriation is hereby made from the road and bridge fund of this province for the establishment and operation of said maintenance system of an equal amount of ₱350, Philippine currency, for each kilometer of such designated first-class road now or hereafter constructed and declared to be such by the director of public works, with the approval of the secretary of commerce and police: *Provided, however*, That the unexpended balance from this appropriation in any one year shall, upon the certificate of the director of public works, approved by the secretary of commerce and police, that no deterioration has taken place in such designated first-class roads of the province of ——— be turned into the road and bridge fund of said province for general road and bridge purposes.

"*Resolved further*, That whenever the director of public works shall become satisfied that any section of such designated first-class road has deteriorated, he shall notify the provincial government of ———, and if within one month from the time of receiving such notice such road shall not have been repaired to at least as good condition as before, the director of public works shall notify the secretary of commerce and police, who may order the work of maintenance of said road to be taken over by the district engineer.

"In such event the provincial treasurer is authorized and directed to pay for said maintenance, upon accounts verified by the district engineer as true and correct, all unexpended sums appropriated or as much thereof as may be necessary, for such maintenance of the section of the road so taken over.

"In case of failure of the provincial treasurer to make such payments, the payment of the amounts withheld is hereby authorized to be made by the insular auditor, upon accounts approved by the district engineer, from any moneys due the province from the insular treasury.

"For the purpose of this resolution, first-class roads shall be deemed to be all roads which possess substantial foundations and a durable and continuous surfacing and are certified by the director of public works to be first-class roads."

The road committee.—He also appointed a "road committee," under date of July 31, 1907, the duties of which were to study the road systems of the islands which are of greatest importance and to recommend action along all lines connected with the good-roads policy.

The committee has held numerous meetings, has had many conferences with provincial officials, and has visited several of the provinces. It has determined a system of roads of maximum necessity to the provinces and for interprovincial communication, the reconstruction of which will be accomplished within a period varying from five to ten years. This system is designated as the insular system, and the expenditure of allotment funds has been limited thereto during the past year. It is of such importance that it warrants an equitable expenditure of a maximum percentage of insular funds. The committee has also designated the roads of second and third importance as provincial and municipal roads. The provincial roads serve as feeders to the insular system, and naturally any extension of the insular roads will include roads now designated as provincial. The municipal roads are such roads and trails as are of local importance only. The above classification relates only to the importance of roads.

The committee has also studied the type of construction merited on the three classes of roads indicated above, and the following have been adopted:

First-class roads include those possessing substantial foundations and drainage, a durable and continuous surfacing and permanent types of bridges and culverts, passable throughout the year by heavy traffic.

Second-class roads include those partially surfaced and surfaced roads of such widths and light grade as will permit the passage of light traffic throughout their entire length.

Third-class includes those roads and trails over established traffic routes, varying from narrow roads passable with difficulty for light traffic to trails passable only for ponies.

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The following general order has been followed:

1. Upon the acceptance by a province entitled to its proportion of the allotment funds of the conditions of Act No. 1652, and the passage of the road resolution, the provincial board has been notified that its allotment fund has been set aside for its use.

2. Upon receipt of the designation of the project by the provincial board, accompanied by an estimate by the district engineer and concurrence therein, together with a provincial resolution providing for any deficiency between the allotment funds and the estimated cost of the project, the allotment fund has been deposited to the credit of the provincial treasurer.

3. All construction work, whether on roadbed, surfacing, or structure, must be first class. It must be executed under the direction of the district engineer or a special road engineer.

4. Immediately upon completion of permanent works, the authorized caminero system must be organized and installed.

Road work organization.—The organization in connection with the present good roads policy under the secretary of commerce and police consists of—

1. The road committee, which is composed of two appointees from the executive bureau and two from the bureau of public works. The director of public works is its chairman. Its powers are advisory only.

2. The director of public works, under whose bureau all construction work is executed.

3. An inspecting force consisting of a general road engineer, and four road engineers, each one of whom is responsible for road work accomplished within his road division. The various provinces have been divided into four divisions. This inspection force is responsible for the type of construction, for the efficiency of road organization on both construction and maintenance works, for equipment or plant, for the accounting system, valuations and reports on conditions and depreciation of roadbed or structure.

The constructing force, which includes the district engineers, their assistant engineers, and such special road engineers or superintendents as may be required from time to time to execute authorized work.

At the close of the fiscal year Mr. J. D. Murray had been appointed general road engineer, but it had been impossible to secure the required inspecting force. It had also been impossible to secure the number of civil engineers necessary to execute and supervise all of the authorized work for which funds were available. Ample provisions, however, are in progress to provide for this force in the near future and it is anticipated that no undue delays will follow.

The total amount of insular funds available for roads and bridges during the fiscal year was ₱2,816,476.75. This sum included ₱500,000 appropriated by Act No. 1688, enacted August 17, 1907, and which became available for allotment under authorized regulations in December; also ₱1,500,000 appropriated by Act No. 1837, enacted May 29, 1908. Of the amount available up to January 1, 1908 (₱1,316,476.75), 26.3 per cent have been spent and 9.4 per cent are under contract for bridges, the delivery of steel for which and the fabrication of which in Manila will require nearly a year after the investigations and designs have been completed. The total value of the work in progress is 60.7 per cent, leaving 39.3 per cent not started at the close of the year.

Tabulation A shows the general information relative to roads and trails in the Philippine Islands and represents a preliminary study of this subject by the road committee.[a]

Tabulation B shows the allotment to provinces accepting the provisions of Act No. 1652.[a]

Tabulation C shows the essential action taken in the distribution of funds allotted under Act. No. 1688.[a] There is shown the date of the acceptance of the provisions of Act No. 1652, that of the road resolution, that of the selection by the provincial board of the project on which funds were to be expended, and when allotment funds were deposited to the credit of the provincial treasurer.

Tabulation D shows the first-class roads which have been designated by the director of public works and approved by the secretary of commerce and police.[a] A few of the provinces showing no action taken in this tabulation have installed a caminero system on selected first-class roads, and have installed a gang system on some roads the condition of which necessitated heavy maintenance expenses for at least one year, and for which a gang system was more economical.

A study of the rainy season was made from information available in the reports of the weather bureau in order to select a period not exceeding five

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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months during which the employment of a caminero on an average of 1 kilometer of road would be required.

The following tabulation [a] shows the status of this question and the date when action was taken.

From tabulations C and D it will be noted that projects have not been selected at the close of the fiscal year in Antique, Ambos Camarines, Bataan, Cagayan, Isabela, Oriental Negros, Samar, Sorsogon, and Surigao. The allotments for these provinces aggregate ₱105,300. The necessary action is in progress in all of these provinces and will be completed in the immediate future.

INSULAR ROADS.

Description of various important roads provided for entirely by insular funds will be found in preceding reports. Tabulations showing the financial statements relative to the most important of these roads appear in the report for the fiscal year ending June 30, 1907.

Tabulation E shows the appropriation provided by Act No. 1688 and the expenditures thereunder during the past fiscal year. [a]

These appropriations were available to the interested provinces upon the passage of resolutions accepting the provisions of the double cedula Act, No. 1652, and providing for the continuous maintenance of these roads upon their completion. The necessary resolutions were passed by all provinces except Tarlac.

Tabulation F shows the present status of these insular road projects. [a]

Loboc-Bilar, Cebu-Toledo, and Carcar-Barili roads.—Final surveys are in progress on the Cebu-Toledo road and on the Loboc-Bilar and Carcar-Barili roads, under the supervision of Mr. R. K. West, road superintendent.

Construction work on the Cebu-Toledo road began March 8, 1908. Previous work had extended into the mountains, and the construction of camps suitable for the entire force of foremen and laborers was necessary. A survey party has nearly completed its work of final location and cross-sectioning of the remaining portion of the road. The heaviest rock work has been finished. The roadbed has been completed and surfaced from the end of previous work, kilometer 10 to kilometer 13.

The labor conditions in Cebu in connection with the construction of the railroad were such that only a few hundred laborers could be secured. The organization of the force had been based on a working force of 1,000 laborers. Various methods of securing laborers through the assistance of provincial and municipal officials and by contract with private parties failed. The most successful method has been a small grading contract with the Filipino capataces employed on the work. Funds to meet wages are advanced to the capataces taking small contracts; they control the wages and hours of labor of their men, and their payments of wages are carefully checked. This system is securing more labor and giving better results than any other system heretofore tried. The surfacing, rolling, and all bridge and culvert work have been accomplished by day labor.

Tabaco-Ligao road.—This road was started prior to the complete location surveys by the expenditure of about ₱10,000 for broken stone and for the delivery of stone on the road site, in order to relieve distress existing in the province of Albay due to the low market value of hemp, the principal product of the province. This work was under the direction of the district engineer. Actual construction was authorized on July 3, 1908, by the appointment of Mr. O. D. Filley, supervising engineer, as superintendent, and will continue under his supervision until the heavy bridge work is completed. The principal items of work to be accomplished consist of the reduction of a few steep grades, resurfacing with broken stone or gravel 28 kilometers of the road for a width of 3.7 meters and a depth of 15 centimeters, except in the municipality of Tabaco, where the width and depth of surfacing is increased, and the construction of 29 reinforced concrete arches and girder bridges, the aggregate span of which is 453 meters.

The organization for the execution of this work, based on the employment of about 500 men, has been completed and a thorough accounting system is in operation. The heavier equipment includes a 10-ton road roller now on the ground, and a tramway 4 kilometers in length has been ordered. The location presents some unavoidable difficulties, the most serious of which are the lava

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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bed crossings at the foot of the volcano Mayon. These lava crossings are water courses subject to heavy and frequent floods, with steep slopes, and with beds composed of a deep mass of bowlders which appear to have considerable motion during flood stages.

Bay-San Pablo Tiaong road.—This road was described in the last annual report. The La Laguna section, 26½ kilometers in length, is a difficult and expensive road to keep in repair, and an insular appropriation of ₱42,300 was provided for in Act No. 1688 for this purpose. To this amount the province of La Laguna has added ₱28,579.74, making a total of ₱70,879.74. A contract for repairing, resurfacing, and rolling 8 kilometers from Bay was let during the year and has been completed. This contract, including extras, amounted to ₱36,205.37. A contract for building 13 bridges of reinforced concrete was let for ₱11,925.50 and at the close of the fiscal year was 75 per cent completed. Repairs on other portions of the road, made by administration, amounted to ₱22,748.87, and superintendence to ₱2,862.71.

An insular appropriation of ₱5,000 was made for the Tayabas section of this road, of which ₱2,082.65 has been expended. Work has consised of clearing, light grading, and surfacing 3.2 kilometers of road and repairing the abutments of an old Spanish brick arch.

Portions will be placed under the caminero system of maintenance, and the entire road will be similarly maintained as soon as the heavy surfacing required over a small portion is completed. The district engineer has supervision of this work.

Calamba-los Baños-Bay road.—A description of this road and previous construction thereon appears in the preceding annual report. The roadbed had been surfaced throughout and 18 temporary bridges had been constructed. It was estimated that ₱32,000 would be required to replace these bridges with a permanent type of construction, and the estimated amount was provided by Act No. 1688.

Plans were prepared, the project was duly advertised, and bids were opened February 26, 1908. The contract was awarded March 11 for ₱24,630 and ₱50 per cubic meter for extra reinforced concrete in place. The date of completion was June 30, 1908. The work to be accomplished consisted of the construction complete in accordance with the plans and specifications of 6 culverts and 12 bridges varying in length from 1 to 14 meters, including the restoration of the roadbed adjacent to the bridge sites. The work was satisfactorily completed within the contract time.

The total cost was ₱25,297.50, not including charges for superintendence, which was under the direction of the district engineer and amounted to ₱576.06.

Upon completion of the work the caminero system of maintenance was organized.

Pasay-Camp Hayson road.—An insular appropriation of ₱54,125 was provided by Act No. 1688 for this road. The work has been completed, except the branch road from Las Piñas to Camp Hayson. The completed portion, 10 kilometers in length, connects Manila with the road system of Cavite. Alternative routes are under investigation in order to determine the most advantageous to Muntinlupa, of which the Camp Hayson road may form a link. The completion of this branch will connect Manila southward with the good roads of Laguna, Batangas, and Tayabas.

The road has been ditched, graded, rolled, surfaced, and rerolled. The surface is 4 meters wide and 10 and 15 centimeters thick at the sides and crown, respectively. The material is stone and unscreened Pasig River gravel in equal amounts, over which were placed enough quarry screenings to fill voids when wet and rolled. The stone and gravel were delivered under contract on the Pasay beach. Otherwise the work was executed by administration at a cost of ₱49,990.71.

A complete caminero system has been established on the road.

The construction of this road, together with the Bay-San Pablo portion of the Bay-Tiaong road and the Calamba-Los Baños-Bay road has been executed under the direction of the district engineer of the sixth district.

Pagbilao-Atimonan road.—A description of this road appears in the preceding annual report. Its reconstruction was provided for by an appropriation under Act No. 1662 of ₱120,000, and the work has been executed by administration under the supervision of the district engineer of the seventh district. The principal work, commencing February 1, 1908, consists of clearing, reducing excessive grades, and resurfacing 30.15 kilometers and replacing temporary wooden bridges and several fords with 83 reinforced concrete bridges. Up to

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July 1, 1908, there had been completed 17 kilometers of road, of which 14 have been turned over to the province for maintenance as first-class roads.

Bridge work began May 1, when quarters for the men, blacksmith shops, stables, and a storehouse were constructed. At the end of the fiscal year the piers and abutments had been erected for a reinforced concrete bridge of three 8.5 meter spans.

The total expenditure to July 1, 1908, amounted to ₱20,555.96.

San Miguel de Mayumo-Sibul Springs road.—A statement of the bids received, the awarding of the contract, and the amount of work done prior to July 1, 1907, appears in the preceding annual report.

Work began May 14, 1907. The specifications provided for the suspension of work from June 1 to September 1 on account of rains. Upon request, the contractor was permitted to work throughout this period at his own risk and under condition that he pay the extra cost of inspection.

The contract time of completion was January 11, 1908.

On account of unsatisfactory organization and slow progress made by the contractor the contract was annulled December 3, 1907, on which date approximately 26 per cent of the work had been completed. On December 21 an agreement was entered into with the contractors' bondsmen for the completion of the contract. Additional work was provided for and an additional allotment of ₱9,500 for such work was secured under Act No. 1 on January 27, 1908. Work under the new agreement began January 6, 1908, and was completed June 25.

The completed road is suitable for one line of traffic. The width of roadway is 4.25 meters, the width of surfacing 2.44 meters, and the average depth of surfacing rolled in place 20 centimeters. The bridges and culverts are of a permanent type of construction, comprising 15 different structures of concrete, steel girders with reinforced concrete slabs, or reinforced concrete slabs, aggregating 36.08 meters of span lengths. The total length of the road is 12.887 kilometers. The elimination of a ford at Sibul Springs by the construction of a bridge of two 27.43 meters steel trusses has been provided for by appropriation in Act No. 1688 and work thereon is in progress.

The use of this road is of special value on account of the medicinal property of the large spring at Sibul Springs, the development of which has been rapid since road work was authorized. The traffic over the road since its construction has steadily increased, and the carromata rate between San Miguel de Mayumo, the railroad station, and Sibul Springs has decreased from ₱8 to ₱2.

The following table shows the average cost of construction items as specified:

Grading, including rolling	cubic meter	₱0.94
Gravel delivered to roadbed	do	2.00
Surfacing, including spreading, sprinkling, and rolling	do	1.29
Pipe culvert in place	linear meter	9.81
Reinforced concrete culverts in place	cubic meter	18.73

Upon completion of this road, a caminero system of maintenance was organized and will be installed immediately. The capataz and 13 camineros are provided with distinctive badges and have been carefully instructed regarding their duties. The capataz inspects the entire road at least three times per week. He will be provided with a bicycle. Each caminero will be provided with a mattock, a shovel, a rake, a tamper, a 3-pound stone hammer, and a wheelbarrow. He is required to furnish his own bolo. Gravel depositories containing 5 cubic meters and averaging ten to the kilometer have been constructed and filled with selected surfacing gravel. It is desired to make this maintenance result in a betterment to the roadbed, and on account of the recent construction relatively heavy maintenance expenses are anticipated. Of insular funds ₱7,500, of provincial funds ₱1,000, and ₱500 from the municipality of San Miguel de Mayumo have been secured for this maintenance work during the present fiscal year. This fund also provides for the purchase of equipment and the construction of the depositories above noted.

BENGUET ROAD AND BAGUIO TOWN-SITE IMPROVEMENTS.

BENGUET ROAD.

Act No. 1688 provided ₱38,000 for the improvement of the Benguet road, and ₱50,000 were authorized under the appropriation provided in Act No. 1679 for general maintenance purposes.

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Freight and passenger traffic during the spring of 1908 largely exceeded that of the preceding year. It has been estimated that fully 1,000 people visited Benguet during the past season, and the completion of the railroad to within a few kilometers of Camp One has caused building operations to be carried on to an extent much larger than heretofore.

The superintendence of the Benguet road was in charge of Mr. R. K. West, road superintendent, until April 8, 1908, since which date Mr. William M. Haube, assistant engineer, has been in charge.

The principal improvement consisted of the elimination of a dangerous reverse curve on a steep grade north of Camp One and the construction of a heavy retaining wall at a cost of ₱14,249.29.

The maintenance work resulted in a gradual improvement of the roadbed with respect to uniform crowns, improved drainage, extension of protection walls and of the surfaced portions of the road, and the replacing of temporary timber structures with masonry as fully as available funds permitted. The closing of traffic by a decreasing number of small slides has been limited to a few hours only. The caminero system has been installed for the usual maintenance work and a gang system for the heavier work. A bridge gang is also required to care for numerous bridges, including the 8 suspension bridges on this road. An inspection of the larger bridges was made by a special committee during February, and the recommendations then made have been acted upon with the exception of the heavy bolting proposed in the towers of the suspension bridges. As a result of this inspection 8 large structures will be replaced, 3 of which will be reenforced-concrete arch bridges, having an over-all length of 70.8, 75.1, and 23 meters, respectively. The 3 arches of 1 bridge will have clear spans of 18.3, 30.5, and 18.3 meters. The 2 arches of another will have clear spans of 30.5 meters each, and the other bridge will have a clear span of 20 meters. The remaining 5 bridges will be of steel. The 2 largest will have pin-connected spans of 79.2 and 49.1 meters, respectively. The over-all length, including the girder approach spans, is 103.6 and 60 meters, respectively. Designs and specifications for the 5 steel bridges, comprising 15 spans, have been completed and contract has been entered into with the Atlantic, Gulf and Pacific Company under date of June 8, 1908. Designs for the 3 reenforced concrete bridges are in progress. The erection of these bridges during the current fiscal year is anticipated.

The construction of these bridges will eliminate all but 1 of the temporary suspension bridges. Its elimination, together with that of a Howe truss timber bridge, can be accomplished by the construction of about 300 meters of roadbed on the opposite side of the canyon.

During the fiscal year 10,263 meters of road have been surfaced and 4,975 cubic meters of stone have been broken by contract at a price ranging from ₱0.95 to ₱2.60 per cubic meter. Reenforced concrete culverts have been constructed, replacing small wooden bridges, and 8 new culverts have been constructed. Repairs have been made on 111 bridges. Of ditching and clearing 1,066 meters have been accomplished, and the usual maintenance work has been vigorously prosecuted.

The expenditure for the general maintenance work has been ₱72,470.98, of which ₱52,000 were derived under Act No. 1679 and ₱20,470.98 from the receipts of operation of this bureau.

BAGUIO TOWN-SITE IMPROVEMENTS.

Mr. William M. Haube, assistant engineer, continued in charge of Baguio town-site improvements after his appointment as superintendent of the Benguet road. His duties have been varied and numerous. Additional to the funds appropriated for special projects to various bureaus, the funds available for the much-needed improvement of Baguio have been limited to funds derived from the sale of lots, under the supervision of the bureau of lands, and to funds appropriated by the Philippine Commission. These funds during the past fiscal year amounted to ₱12,303.64 from the sale of lots and ₱20,000 appropriated by Act No. 1688, a fund altogether insufficient to develop the road system necessary to make the building sites available, to properly construct and maintain these roads, to construct streets in the business section, and to meet the rapid and merited development of Baguio.

Present conditions indicate that additional funds will be needed to surface the present system of roads and to maintain them, to maintain the government buildings, to provide a needed water supply, and necessary sanitary measures

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of special importance during the hot season, and unless additional funds are secured the conservation of present property and the utilization of the advantages of Baguio will be seriously delayed.

Surveys.—A brief description of the principal items of work accomplished follows: A resurvey of the residence section was necessary on account of modification by the consulting architect of the size and shape of residence lots. This work was continued through July and August and was then turned over to the bureau of lands.

In November, 1907, the consulting architect completed the preliminary layout of the entire business section. A new survey was made and the map of the entire section forwarded to the Manila office for further action. The necessary surveys were made for the water supply for the Baguio Civil Hospital, utilizing the Governor Pack Spring. The alignment of the pipe line, location of the pumping plant, and of the distributing tanks have been determined, and construction is in progress. Additional surveys were made to determine upon the most suitable location for the proposed civil hospital and for that of the school and constabulary buildings, and location stakes for all these buildings have been set.

A preliminary survey for a proposed railroad from Baguio to the Trinidad Valley has been made. The total length of this road is 3.41 kilometers and the maximum grade 2½ per cent. The proposed north drive was resurveyed for construction work, the grade determined, and the stakes set. The length of this drive will be 2 kilometers, with a maximum grade of 12 per cent. A horse trail from Park Circle to Whitmarsh Valley has been located and staked.

The bureau of lands has made a survey under the direction of the road superintendent for a school road connecting the north and south drives, traversing the school reservation, and for a road leading from the plaza in Baguio up to the constabulary building.

Roads.—The following roads have been constructed: Road in residence section Brookside, 718 meters; road to new hospital and Worcester Hill, 812 meters; North Drive, 426 meters; road to constabulary building, 366 meters; trail through the school grounds, 610 meters; Legarda road, residence section, 800 meters. Of road in the Baguio town site 24 kilometers have been improved by recrowning and reditching. Funds for a proper and economical system of maintenance are not available.

The most expensive roads to keep in repair are: The Governor Pack road, the military cut-off, the business section road, the Bokawkan road, the Trinidad road, the South Drive, and the Bua road. These are the roads over which the heaviest traffic passes. The Bua road leads to the Bua mining district and, on account of natural difficulties, its conditions, even in the dry season, is usually unsatisfactory. When originally built it was not expected that it would become an important thoroughfare, and funds for a permanent type of construction were not available. The roadbed is narrow, the alignment is poor, the drainage is insufficient, and the entire construction is of a temporary character. The increasing heavy traffic demands attention and immediate repairs should be made to put this road in thorough repair. It is estimated that ₱6,000 will be needed for this work.

All the roads in the above list need durable surfacing. Work has already been commenced on the Governor Pack road, 640 meters of which have been metaled. It is estimated that ₱27,000 will be needed for surfacing these roads.

Buildings.—Nine government buildings are under the charge of the road superintendent. Repairs to the extent of ₱2,818.57 have been made thereon during the past fiscal year. The old hospital, which is being occupied by the bureau of health, will soon be vacated and occupied by the post-office, giving a much more convenient and centrally located situation for the public. The building now being used by the post-office will be fitted up for offices for the Commissioners. The cottages are in fair condition, and with proper care will last about two years. It is estimated that ₱2,000 will be sufficient for repairing all the cottages for the coming fiscal year.

Governor-general's residence.—Due to difficulties in securing supplies, the contractor was so delayed on the governor-general's residence that it was evident that it would not be finished in time for occupancy during the season. On December 28 the secretary of commerce and police visited the building site and authorized the bureau to give the contractor all possible assistance. The building was completed on March 22 and occupied by the governor-general the following day.

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New hospital.—For the construction of a new civil hospital, for which plans were prepared by the consulting architect, ₱50,000 were available. Bids for the construction were advertised for on December 5, 1907, to be opened December 14, 1907. Only one bid was received and that was for the partial execution of the work for the lump sum of ₱75,000. On account of the excessive amount this bid was rejected. Plans were then revised, and the construction by administration was begun on January 8, 1908, the building site having been previously graded. Benguet pine lumber was contracted for in Baguio at the following prices per thousand feet:

For rough hand-sawn lumber	₱82.00
For lumber surfaced one side	85.00
For delivery at building site	7.75

The work was expedited as much as possible, and the framework was completed about April 15, notwithstanding the difficulties encountered in sawing all of the lumber by hand. An additional appropriation of ₱11,000 has been made which will complete the building practically in accordance with the original plans.

Agricultural station buildings.—At the government agricultural station the following frame buildings have been constructed: One superintendent's cottage, 8.5 by 9.8 meters; one stable for 12 animals, 15 by 7.5 meters; one greenhouse, 7 by 3.8 meters with glass roof; and a stallion barn for 10 animals at the stock farm, 9.4 by 7.3 meters. Plans for these buildings were prepared by the road superintendent and approved by the consulting architect. Practically all of the lumber was felled and sawed by hand in Benguet. Construction was begun April 1 and completed by the end of the fiscal year. The amount appropriated for this work was ₱10,379, and the cost was ₱9,517.98.

School buildings.—The construction of the academic building, the manual training school, the dormitory, and two cottages for teachers for the bureau of education was executed by administration. It was desired that the dormitory and manual training school be ready when the teachers' assembly met about the middle of April. Work was started in February, the erection of the framework commenced March 10, and the buildings turned over to the bureau of education on April 13, two days before the assembly arrived. The remaining buildings will be finished in two months. The total appropriation was ₱24,000, and the amount expended to date ₱10,122.63.

Constabulary barracks.—Authorization for the construction of the constabulary barracks and kitchen building, for which the sum of ₱18,000 was available, was given on February 20. Construction work by administration began on April 12, and on June 30 the barracks had been finished and the kitchen building 90 per cent completed. The total of expenditures to date was ₱17,247.61.

The following small timber frame and sauale buildings were also erected: Automobile shed, cost ₱715.29; clerks' quarters, Benguet road, ₱270.31; stable and chicken house, governor-general's residence, ₱1,535.42; laborers' quarters, two buildings, and foremen's quarters, three buildings, ₱1,386.79; and horse shed for session building, ₱134.80.

Water supply.—In order to provide a supply of water for the residence of the governor-general, a spring about 260 meters west and 32 meters below the level of the first floor of the building was cleaned and a masonry storage well constructed adjacent thereto. From this well water was raised to storage tanks in the attic of the governor-general's residence by means of an 8-inch Ericson hot-air engine installed in the pump house adjoining the storage well. The cost of this system, including piping, tanks, engine, pump house, and storage well was ₱2,144.58.

A small gravity water supply has been installed upon the school grounds from a spring north of the school grounds and near the athletic field. The spring has a flow of 7½ gallons per minute during the dry season. A masonry well was sunk at the spring, a siphon system was installed, and the water delivered through a ¾-inch pipe to a storage tank on the school grounds. The cost was ₱392.13, not including the pipes, the connections, and the tank, which were furnished by the bureau of education.

The sum of ₱4,000 was allotted from the appropriation for the civil hospital for its water supply, which, with an additional sum of ₱6,000, secured from the funds of the Baguio town site, provided for the installation of a system that can at any time be expanded to supply the town of Baguio. It was determined to secure the water from the Pack Spring, which entails a lift of approximately 120 meters and a discharge line approximately 600 meters long. A steam boiler

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with a single cylinder straight line mining pump will be used for this purpose. The Pack Spring is really a series of springs furnishing a daily supply of about 1,000,000 liters during the dry season. These springs were combined by sinking cement pipes 1.2 meters in diameter to a depth of 3 meters below the bottom of the stream and projecting 1.5 meters above the surface, in order to prevent surface water from entering the well. The suction line of the pump will be placed in this well and the water forced through a 2½-inch discharge pipe into a 50,000 liter cement lined stone cistern at an elevation about 30 meters above the hospital building. The water will fall by gravity to the buildings through a 1½-inch pipe. This project was 50 per cent completed at the end of the fiscal year.

Disbursements.—During the fiscal year the sum of ₱64,582.17 was disbursed for labor and local supplies under the immediate direction of the road superintendent for various buildings and other projects and ₱19,007.63 for Baguio town-site roads, a total of ₱83,589.80.

BRIDGE DIVISION.

The work of this division comprises designing, issuing plans, preparing contracts and specifications, and the inspection of steel bridges fabricated in Manila. The force of this division has been materially strengthened because of the increased number of requests for bridge designs, specifications, and contracts, and also to relieve the district engineers of a portion of their office work.

On account of the nature of the work of this division it was possible to transfer it to Baguio during April and May and a portion of June. The results in work accomplished and improvements in health and energy of the entire party, on account of the invigorating climate at Baguio, were very satisfactory.

Standard designs have been prepared for pipe culverts, 60 centimeters in diameter, and steel forms for the same; culverts of reenforced concrete from 1 to 6 meter spans; slab and girder bridges from 6 to 12 meter spans; and segmental arches from 6 to 15 meter spans for a rise of one-fifth to one-third of the span; also general plans and stress sheets for steel bridges of 16.2 and 37.6 meter spans. Numerous tables and diagrams for use in designing reenforced concrete slab and girder bridges, metric conversion tables, and tables showing the spacing of different size bars for various areas of steel required; also general forms for advertisement, specifications for both reenforced concrete and steel spans, proposal sheets, and contracts have been prepared. Tests of various sands and stone have been made for the determination of safe coefficients in designs and for the information of the field engineers.

All field and district engineers are required to submit, with requests for designs, a survey of bridge site with a bridge data sheet giving information on high and low water, velocities, foundations, traffic, clearance required, funds avialable, and various other data for the information of the designer, except when the use of the smaller standard types with minor modifications is practicable.

The economy resulting in the preparation by the bridge division, rather than by the various district engineers, of new designs which require but slight modifications of designs already prepared is obvious.

During the fiscal year detailed plans, bills of material, and estimates of cost have been prepared for 40 different projects, involving 152 bridges, the estimated cost of construction of which is ₱829,000, exclusive of the preliminary field investigations and cost of preparation of plans. These bridges required 83 sets of designs and detailed plans, and include reenforced concrete arches and girders and steel bridges with reenforced concrete floors.

Contracts have been entered into for 19 steel bridges, the length of span aggregating 780 meters and the weight 725,000 kilos. One span was purchased through the purchasing agent. There will be fabricated in the Manila shops of the Atlantic, Gulf and Pacific Company sixteen spans, and two will be imported from the United States.

Bridge construction under the immediate direction of the district engineers and of road superintendents has been extensively carried on throughout the provinces.

Typical designs of a girder and arch span and substructures for steel spans are attached hereto.[a]

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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DIVISION OF BUILDING CONSTRUCTION AND REPAIR.

General.—Plans and specifications for new permanent public buildings, regardless of the source of funds, and all extensive alterations or repairs to existing buildings are prepared by the consulting architect upon request of the interested officials. Upon completion of such plans and specifications, the project is forwarded to this bureau and executed by contract or by administration under the supervision of the master builder.

Construction and repair work may be divided, according to the source of the funds appropriated for the project, into three classes:

(1) Projects provided for by appropriation in the public improvement bill. These are executed in the order of their importance and advantageously distributed throughout the year.

(2) Projects more or less of the nature of an emergency, payable from the general repair fund of this bureau, or chargeable to the bureau or office requesting the work. These are executed as necessity demands.

(3) Projects provided for wholly or in part by provincial or municipal funds. Upon completion by the consulting architect of plans and specifications for such projects, this division verifies the appropriation and the registration of the title to the site, prepares the advertisement for bids, and, under authorization, awards the contract and supervises the construction, or performs the work by administration. The fullest possible use is made of the district engineers and their technical forces in executing work in the provinces.

The larger projects have been accomplished by contract except that, in a few cases on account of local conditions, the governor-general has waived the requirement of construction by contract and has authorized the erection of public buildings by the provincial board concerned, the technical supervision of which has been furnished by the district engineers.

An increase in the number of skilled laborers and in the efficiency of common labor is noticeable, and the tendency is toward a reduction in time and money required for construction work. The need of efficient contractors has existed in the past, but under present conditions a satisfactory number of contractors are submitting bids. The introduction of reinforced concrete and other higher types of building construction has required close inspection and constant instruction to foremen and workmen. Many contractors, especially the Chinese and Filipinos, lacking knowledge of the new work, have hesitated to bid. However, the system of inspection by this bureau, which in some cases amounts almost to actual direction, and the impression that fair treatment is received, have encouraged a considerable number of these contractors to enter the field.

The total number of projects completed during the year was 1,223, of which 52 were authorized under maintenance, alteration, and repairs, Act No. 1679; 300 were for other bureaus or offices for which bills were rendered; 44 were authorized by special appropriations; 182 were executed for the operation and maintenance of this bureau and chargeable against its contingent expenses; and 645 were general-repair projects.

During the year the inspectors of this division have inspected 13,715 barrels of cement, 10 per cent of which have been sampled and submitted to the laboratories of the bureau of science and the bureau of supply for testing. The Fairbanks 200,000-pound testing machine in the timber laboratory of the bureau of prisons has been repaired, and numerous tension and compression tests have been made of steel reinforcing bars, steel cables, concrete cubes, etc. A system of sand and gravel testing has also been maintained to determine the suitability of various materials for building and bridge work and to determine safe coefficients for use in reinforced concrete formulæ.

A brief statement of the more important projects authorized by Act No. 1679 follows:

Preparing a building at the bureau of science for the new cement-testing laboratory	₱1,700
Constructing a new bodega at the Nozaleda lumber yard, Manila	6,000
Repairing and altering the Santa Lucia barracks, Manila	1,800
Altering marble hall, ayuntamiento, to provide accommodations for a session hall for the Philippine Assembly	2,500
Constructing a fireproof vault in the ayuntamiento (in progress)	5,000
Repairing and renovating the post-office and constructing a fireproof stamp and registered-mail vault, Manila (in progress)	6,000
Constructing a building at Alabang for small animals	1,800
Installing water and plumbing systems in the governor-general's residence at Baguio	5,000
Repairing former trade-school building, normal-school group, Manila	1,800

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The following projects authorized by Act No. 1688 have been completed or are in progress:

Construction of fireproof floors in intendencia	₱10,000
Extension of vaccine stables, bureau of science	3,500
Gas producers at bureau of science	10,000
Fireproof vault in Oriente building	10,400
Reconstruction of Magellanes monument, Manila	5,000

Buildings completed by contract.—The following is a list of buildings which have been completed by contract: [a]

Buildings completed by administration.—The following is a list of buildings which have been constructed or extensively repaired by administration: [a]

The total value of buildings completed by contract and administration is ₱326,771.84.

Buildings in progress.—The following is a list of buildings, construction of which by contract was in progress and an average of 61 per cent completed on June 30, 1908: [a]

The following is a list of buildings the construction of which was in progress by administration on June 30, 1908: [a]

Buildings to be constructed.—Plans have been prepared by the consulting architect and forwarded to this office for execution for the following buildings, construction of which is now pending: [a]

The value of building construction and repair executed by this division by contract or by administration aggregates ₱978,971.84. The expenditures on maintenance, alterations, and repairs, and on authorized minor projects aggregate ₱88,375.90. The total expenditure under the supervision of this division for the fiscal year ending June 30, 1908, was ₱1,067,347.74.

PROVINCIAL WORK.

The district engineer Act No. 1401, section 4, provides that "No contract for public works exceeding a cost of ₱500 shall be undertaken by a provincial board before the plans have been examined and approved by the district engineer." On account of the limited number of technical men available, it has been necessary for the provincial treasurer to undertake all of the public works possible under the limitation of the act above cited, and occasionally to extend his supervision over public works which should have been accomplished by the district engineer. The provincial treasurers, with few exceptions, are not trained and experienced in technical work, and their responsibilities and duties as treasurers are too heavy to permit the supervision of public works. As a result, and on account of a steady advance in public works throughout the provinces, several provincial boards have requested that at least one engineer be assigned exclusively to their provinces. Provisions for public works have increased more rapidly than the number of technical employees, and at no time has it been possibly to properly inspect and supervise the numerous construction projects in progress throughout the islands. However, under recent authorization for the employment of additional engineers, it will soon be possible to meet these requests and to supervise more efficiently the numerous provincial projects.

The necessity rests upon the provincial boards equitably to subdivide throughout the municipalities of their provinces the funds available for public works. The result is a series of small projects, each one of which may require special surveys, estimates, designs, specifications, and contracts, or the organization of a force to execute the work by day labor. This result entails an expense for engineering and supervision largely in excess of the cost of the superintendence of the expenditure of an equal sum on concentrated works. The acceptance by the provinces of the double cedula act also has increased the funds available for provincial public works three or fourfold while no increase had been authorized in the technical force. This difficulty has, however, been met by special authorization for the employment of the necessary number of technical men, and it is anticipated that the services of this additional force, so essential to the economical and efficient supervision of construction and maintenance, will be secured within a few months.

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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The reports of the district engineers show that 486 general projects were completed during the fiscal year and that at its close, June 30, 1908, 589 projects were in progress. The total expenditures were ₱1,643,202.41, an increase of ₱650,109.21, or 65 per cent over the previous year. The total cost of superintendence was ₱171,877.47, or 10.4 per cent of total expenditures. The total appropriations for this work aggregate ₱2,527,046.10, as compared with approximately ₱1,000,000 for the preceding year. The expenditures were 35.6 per cent of the total appropriation. The expenditure for roads and bridges was ₱1,056,718.58, or 64.9 per cent of the total expenditure.

The tabulation of provincial work shows the total expenditure on roads constructed, repaired, and maintained, and on bridges, culverts, and buildings constructed and repaired. Different highways, to the number of 46 and aggregating 662 kilometers, have been placed under an effective maintenance system. There have been constructed 380 bridges, of which 347 were some type of reinforced concrete, 4 were steel, and 29 first-class timber structures, the aggregate spans of which were 737.1, 120.7, and 258.9 meters, respectively. There were repaired 40 bridges.

Practically all provincial boards and municipal councils are requiring permanent types of structures, partly as a result of the active agitation of this question and partly because the immediate necessity of temporary construction of roads and bridges to move existing produce to the markets has been met.

Municipal work.—Section 7 of Act No. 1401 also provides that: "The district engineer shall act in a purely advisory capacity to the municipalities. Upon request by any municipal council, it shall be his duty to make investigations and surveys for the proposed construction or repair of public works, and to submit to the president of the municipality reports and estimates of the cost of such construction or repair, with his recommendations. Upon request of any municipal council he shall prepare plans and specifications for such public works as may be required; and upon like request he shall be charged with the supervision of the construction or repair of the same."

The municipal officials in many cases have not been in sympathy with the work of technical men. The methods and customs practiced in the past have been desired. The personal control of available funds has been regarded as a prerogative of official position. Passive opposition has been encountered, especially with respect to the local purchase of supplies and material, to the securing of labor, and to the rate of wages paid therefor. Appreciation of proposed permanent types of construction of public works of value to the health of the large mass of the people and of general utility has been lacking. The use of voluntary labor and the attempts to reduce to the interested municipalities the cost of public works have increased by a considerable amount the cost of superintendence. To overcome these conditions has been an educational work requiring much patience, tact, and sympathy, together with a clear, definite knowledge of the needs of the people.

Municipal projects are generally small, insufficient funds are available, the work is isolated and remote from the headquarters of the engineer, laborers trained in the use of concrete and structural steel are lacking, and the expenses of supervision are high. It has been the continuous policy of this bureau to suggest to municipal officials the most important work needed along the lines of sanitation, permanent types of structures, and public works of immediate utility. The advance along these lines has been slow. It is evident that the needs of the municipalities for public improvements are large, and that with slightly increased power to procure municipal revenues the aggregate work accomplished by them will surpass the public works executed for the insular and provincial governments. Notwithstanding the difficulties cited as having existed in the past, the construction of permanent structures of utility and value to the mass of the people in one municipality is causing an increased demand for similar structures in adjacent municipalities. The reports for the fiscal year show marked improvements; the additional requests from municipal councils for technical assistance and the increased municipal work accomplished by the district engineers have been very encouraging. The total expenditure on municipal projects was ₱159,607.84, an increase of 29.8 per cent over the previous year.

Tabulation G shows the summation of work accomplished by the district engineers, and G–1 that by the provincial treasurers.[a]

[a] Both have been omitted and filed in the Bureau of Insular Affairs, War Department.

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A brief résumé of the more important works completed by each district engineer follows:

District No. I.—This district comprises the provinces of Cagayan and Isabela. There were completed 16 projects and 11 were in progress at the close of the fiscal year. The total expenditure on these projects was ₱42,581.64.

One timber bridge, 30.5 meters long, with concrete abutments, was finished. One steel bridge, 30.5 meter span, one reenforced concrete bridge, 5.5 meter span, and one timber trestle, 18.3 meters long, are under construction.

The erection of the provincial building at Tuguegarao has been continued under many difficulties. Concrete work for the first floor has been completed and the frame for the second story and roof is in progress. The construction of the trades school at Tuguegarao is advancing and the concrete first story is nearly finished.

One ferry and one boatmen's house have been built.

Four parcels of public land have been surveyed for registration.

Both provinces accepted the double cedula law and received their allotments. There are no first-class roads in the district. Plans for the expenditure of the road allotment funds are completed, but construction work has not been commenced.

District No. II.—This district comprises the provinces of Ilocos Norte, Ilocos Sur, and La Union (transferred temporarily from District III).

A total of 106 projects were completed and 113 were in progress at the close of the fiscal year, the total expenditure thereon being ₱130,288.31.

On the Bacarra school the walls have been repaired and a new galvanized iron roof constructed. San Nicolas (Laoag) school, a two-story building, has been rebuilt into a ten-room schoolhouse. The masonry walls only were standing when work began. A new roof has been constructed and minor repairs have been made in the Laoag presidencia. San Miguel school has been reconstructed by voluntary labor. The walls only were standing when work was commenced. Laoag North Central school was built by contract. Lagangilan trade school, a one-story wooden building, was partly erected by student labor.

Bridges to the number of 13 and a large number of culverts were built during the year, mainly of reinforced concrete. Along the important bridges erected were the Candon, a steel truss of 20-meter span, and the Galpac, a wooden truss of 12.2-meter span.

Of separate surveys 37 were made, mainly of building sites for the court of land registration. A large number of municipal projects have been supervised.

Each province accepted the double cedula law, the road allotment projects are in progress, and the caminero system of maintenance will be installed on all first-class roads.

District No. III.—This district comprises the provinces of Pangasinan and La Union (temporarily transferred to District No. II).

A total of 11 projects were completed and 36 were in progress at the close of the fiscal year. The total expenditure on these projects was ₱72,466.23.

Road and bridge equipment to the value of ₱60,000 was purchased during the year, comprising three 16-horsepower traction engines, one 12-ton road roller, 18 cars having a capacity of 2.3 cubic meters each, 2 concrete mixers, 2 rock crushers, and 1 cement-testing outfit. This equipment has reduced the cost of transportation of cement, gravel, etc., from ₱0.44 to ₱0.22 per ton per kilometer.

A crushing plant with a capacity of 100 tons of crushed rock per day has been established at the San Isidro quarry. This plant, with screens and elevators, is constructed to take rock from the quarry to the scows with but one handling. A gravity tramway, 1.6 kilometers in length, delivers the stone from the crusher bins to the scows. Transportation by water is used when possible, as the province owns 8 scows, which are towed by a hired stern-wheel steamer.

The more important road and bridge projects completed were: The construction of the Binmalay bridge, consisting of three 9-meter spans of steel beams, protected by concrete, and of the Anulid bridge, consisting of two 7.18-meter arches, with each abutment resting on a foundation of 25 piles, the center pier of which rests on old Spanish masonry. There have also been constructed two reinforced concrete culverts, and repairs were made to the Laoac bridge.

A section of the Bautista-Rosales road was reconstructed on a new alignment on account of the threatened destruction of the old alignment by the Agno River floods.

Extensive surveys were made on the Ambalangan-Dalim irrigation project under authority of the provincial board.

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Relatively little work has been done for the municipalities, largely owing to lack of funds. The municipality of Dagupan made an appropriation for a new presidencia, action on which has been delayed on account of the funds required to suppress the cholera epidemic.

An estimate of ₱565,032 has been presented for completing work in progress and for new work during the coming fiscal year.

The double cedula law was accepted, road allotment projects are in progress, and the caminero maintenance system has been established on all first-class roads.

District IV.—This district comprises the provinces of Pampanga, Tarlac, and Zambales (temporarily assigned from District A).

The total number of projects was 77 completed and 56 in progress at the close of the fiscal year. The expenditure on these projects was ₱189,203.53.

Among the important projects completed are the following:

The construction of the provincial high school, San Fernando. This building is 37.25 meters long and 15.5 wide. The first story is of reinforced concrete, the second and roof frame of first group timber, and the roof of corrugated iron. The provincial government building at San Fernando is under construction. This is a reinforced-concrete building 34 meters long, 20.1 wide, and two stories high. It contains twenty rooms and two fireproof vaults. The lesser interior partitions and roof trusses are constructed of first-group timber and the roof of galvanized iron. The construction of a one-story timber building for a domestic-science school is in progress, also a combined engine room, shop, storehouse, and stable of reinforced concrete. Construction is in progress on the Anderson intermediate school at Arayat, Pampanga; the presidencia, Apalit, Pampanga; the high school at Iba, Zambales, and the central school at Subic, Zambales.

There have been built during the year 49 bridges, 36 of which are of reinforced concrete, 1 of stone masonry, 6 of timber, and 6 temporary structures of bamboo. Plans have been prepared for several other steel and concrete bridges.

Most of the road work has been confined to Pampanga, because of the lack of funds in the other provinces. The important roads repaired and now in good condition are: Apalit to Macabebe, 6 kilometers; San Luis to Santa Ana, 1 kilometer; Arayat to Magalang, 1 kilometer; Angeles to Magalang, 1 kilometer; Macabebe to Masantol, 2 kilometers; Floridablanca to Bataan, 6 kilometers.

Three irrigation investigations have been made.

The Tarlac River control project was fully described in preceding annual reports. The first section consists of a dike controlling flood water, intersected by a reinforced-concrete culvert provided with sluice gates for irrigation purposes. This section, 1.9 kilometers in length, was reported at the beginning of the fiscal year as practically completed. The extreme flood of August 20 to 30, 1907, overtopped the dike by nearly 1 meter at the downstream end and caused five large washouts which have been filled and the entire dike raised and extended 180 meters. A reinforced-concrete culvert of 2-meter span and containing a sluice gate has been constructed in this extension. No further trouble is anticipated from flood provided the dike is properly maintained. Steps have been taken to turn it over to the municipality of Tarlac for maintenance.

A steel tower and tank have been erected over the artesian well at Mexico at a cost of ₱3,185.23, appropriated from municipal funds. A similar equipment is under contract for the provincial grounds at San Fernando. Water will be piped to all the buildings and around the grounds for gardening purposes.

The caminero system of maintenance has been established on two first-class roads in Pampanga and one in Zambales, and the road allotment projects are in progress in these two provinces. The double-cedula law was not accepted by the province of Tarlac.

District No. V.—This district comprises the provinces of Bulacan and Nueva Ecija.

There were completed during the fiscal year 39 projects and 39 were in progress June 30, 1908. The total expenditure was ₱49,683.43.

There were constructed during the year 16 small bridges and 129 culverts, all of reinforced concrete. Most of these culverts were ordered by the province of Bulacan for the municipalities, which reimbursed the province for the cost thereof. They were located mainly in the municipalities of Malolos, Quingua, Angat, Bulacan, Bocaue, Santa Maria, Meycauayan, and Hagonoy. The Tigpalas bridge, built for the municipality of San Miguel de Mayumo, is the first bridge

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on the road to Sibul Springs. It is a reinforced-concrete slab of 7-meter span, buil on 25-centemeter I beams.

New ferries were installed across tidal streams at Calanate, Bigaa, Bocaue, and Marilao. These ferries consist of large bejuco or rattan cables stretched across the river to which are attached the rafts of large bamboos, three layers deep and wired together. This type of raft was found to be economical, as the timber bancas which were formerly used were quickly destroyed by the teredo. These rafts have a capacity of about 1,500 kilograms, a life of eight or nine months, and cost complete about ₱30. New ferries with bancas were established at Calumpit and Baliuag and the one at Quingua repaired, as the water is fresh at these towns and the teredo is not found.

Surveys were made of about fifty different parcels of land, for the most part municipal building sites, for registration purposes.

Open drains, totaling 150 meters in length, were built of stone and cement to conduct the waste water from the artesian well at Marilao to adjacent rice fields for irrigation purposes.

There were repaired 4 kilometers of the Cabanatuan-Aliaga road, Nueva Ecija, by using a grader and traction engine. One reinforced-concrete bridge and 16 small concrete culverts were also built on this road.

The industrial school, San Isidro, Nueva Ecija, was completed except the floor. It is a one-story building, 27 meters long and 10.8 wide, built of hollow concrete blocks. All of the work was done by students of the school, except that the roof was erected with the assistance of two hired carpenters.

The Malolos-Quingua road, Bulacan, was surfaced with gravel for a distance of 8 kilometers. There were built on this road six culverts, and the caminero system of maintenance will be established at once. The Bulacan-Bigaa road was surfaced with gravel from Matingas bridge to Bigaa, a distance of 7.6 kilometers, and all bridges on this section have been repaired. The Malolos-Bulacan road was surfaced with gravel for a distance of 10 kilometers. The Quingua-Baliuag road was surfaced with gravel for a distance of 5.6 kilometers. The Cabanatuan-Talavera road was repaired and seven small concrete bridges and culverts were constructed.

Plans have been prepared for a reinforced-concrete presidencia at Quingua and for the reconstruction at Santa Maria of the old presidencia which was burned.

The Bayabas and Norzagaray River improvements have been completed. This project consisted in clearing these two rivers in Bulacan Province for the purpose of rafting lumber down from the mountains to the markets. The clearing of the Bayabas was completed last season, and work on the Norzagaray, suspended last year on account of high water, has been completed, resulting in a cleared channel from San Lorenzo to the mouth of the river.

By resolution of the Commission, dated January 14, 1908, the expenditure of ₱6,000 was authorized for the construction of baths at Sibul Springs. The work was commenced the latter part of January by administration under the supervision of the district engineer, and was practically completed June 30, 1908. Formerly two brick baths, each 4.52 meters long by 1.3 wide and 0.9 deep, had been constructed under the orders of Governor-General Weyler. The medicinal value of these springs was well known during Spanish days. The new concrete construction consists of eight private baths, 4.5 meters long, 1.3 wide, and 1 deep, and four free baths, each 4.5 meters long, 2.75 wide, and 1 deep. A semicircular concrete coping is erected around the springs, and timber gates are provided so that the whole discharge of the spring can be concentrated upon one or any number of the baths. A bath house, having a bamboo frame, sauale sides and partitions, and a cogon-grass roof, was erected over the baths. The plaza in the barrio, on one side of which are the springs, was cleared of brush and rubbish, was graded with the material excavated from the new baths, and was placed in sanitary condition.

A considerable amount of municipal work has been accomplished by the municipal officials, some of which are as follows:

At Malolos a new stone river wall was built, the plaza was parked, and some streets were repaired. The plaza at Calumpit was parked, and various streets were graded at Hagonoy. At Baliuag jetties have been constructed in the river to prevent its encroachment on the town, and the streets have been graded. At Aliaga the streets have been graded extensively. A reenforced concrete trade school has been constructed for Malolos, and intermediate and primary schools will be built at several towns during the year. Neither of the provinces of the district accepted the double cedula law.

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District No. VI.—This district comprises the provinces of Cavite, La Laguna, Rizal, and Batangas (temporarily transferred from District VII).

During the year 41 projects were completed and 26 were in progress June 30, 1908. The total expenditure was ₱504,519.94.

The Rizal provincial building, Pasig, and the La Laguna provincial building, Santa Cruz, two-story buildings of reenforced concrete, 33.2 meters long by 23 wide and 34 long by 24.1 wide, respectively, are under construction. Plans were prepared by the consulting architect, and the estimated cost of each building was ₱100,000. The walls and floors of each are approaching completion, and the amount expended up to July 1, 1908, was ₱56,375.81 and ₱50,854.67, respectively. Four smaller buildings have been constructed and seven have been repaired.

The Pasig-Manila road was reconstructed for a distance of 2.5 kilometers, at a cost of ₱10,097.50; the Majayjay road, 11.08 kilometers in length, was constructed by prison labor at a cost of ₱45,518.24; and the Batangas-Bauan road, 6.5 kilometers long, was constructed at a cost of ₱30,078.87.

Of reenforced concrete bridges and culverts 70, with an aggregate span of 157.7 meters, have been constructed.

Of surveys of building sites, 70 were made for the court of land registration.

Each province, except Cavite, accepted the double cedula law. The insular roads, Pasay-Camp Hayson, Calamba-Los Baños-Bay, and Bay-Tiaong, have been described heretofore. Nearly all of the first-class roads have been placed under the caminero system of maintenance.

District No. VII.—This district comprises the provinces of Tayabas and Batangas (temporarily transferred to District VI).

A total of 7 projects was completed and 12 were in progress at the end of the fiscal year. The total expenditure was ₱161,314.88.

During the year 70 kilometers of provincial roads have been maintained and are passable throughout the year; 30 of insular roads have been maintained, and 32 of trail have been repaired and put under maintenance. There have been constructed 17 reenforced concrete, 12 with first-grade timber superstructures, 6 pile of molave and yacal, and 2 steel bridges, having a 22.9-meter span each. All old Spanish bridges have been kept in repair.

Two bridges of identical type and span were erected at Sariaya and Candelaria. The field erection cost ₱976.85 and ₱369.25, respectively. The high cost of erection for the Sariaya bridge was due to high water, which washed out two bents of false work, dropping two panels of the bridge and throwing the rest of it and false work out of alignment. The total appropriation, consisting of insular and provincial funds, was ₱18,445.15. Each bridge is a 22.5-meter span pony, lattice riveted, truss with a guijo floor. They were erected, approaches constructed, and opened for traffic February 22, 1908, at a total cost of ₱15,676.38.

The Lucban-Mauban trail was repaired by removing rock and large bowlders and building 12 wooden bridges, the life of which is estimated at ten years. The appropriation for this work was ₱8,500. An appropriation of ₱8,000 was made for the construction of the Mogpog and Gazan bridges on the island of Marinduque. These two reenforced concrete girder bridges, 8.5 and 6 meter spans, respectively, were completed at a cost of ₱7,009.16.

Contracts have been let for the construction of a reenforced concrete girder bridge, consisting of two 8.2-meter spans and one 8.5-meter span at the Lagnas River, of two piers for a 30-meter steel truss bridge and of two reenforced concrete girder approach spans, 5.7 meters each, at the Yam River; of the substructure for a 30-meter steel truss bridge and one reenforced concrete girder approach span of 5.7 meters at the Dumaca River. Of the work on these contracts, 59 per cent has been finished and they will be completed within the time limit. These bridges are located on the Lucena-Tiaong road. The available appropriation from provincial funds is ₱32,000.

There were appropriated for the repair of provincial bridges ₱7,500. This project consists of the repair of old abutments and replacing plank floors with concrete slabs. Of culverts 17 have been completed with slab floors, and 1 reenforced concrete girder bridge has been constructed. The reconstruction of the remaining 15 culverts is in progress. An appropriation of ₱15,000 from provincial funds was made for the construction of bridges between Atimonan and Lopez. The project consists of building a number of pile bridges, aggregating 225 meters in length, the piles being molave and the superstructure yacal. Three of these bridges, with a total length of 55.6 meters, have been completed at a cost of ₱3,440.38 and the remaining work is in progress.

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The work accomplished on the Pagbilao-Atimonan road has been described under insular roads. The appropriation for this road, ₱120,000, was obtained by adopting the double cedula law.

From the insular appropriation for the Bay-Tiaong road, ₱5,000 was reserved for that portion located in the province of Tayabas. The work accomplished on this project has been described under insular roads.

The inspection of the construction of the Tayabas provincial building has been carried on under the direction of the building division. The municipality of Tiaong appropriated ₱2,000 for street improvements under the supervision of the district engineer. Under this authorization 610 meters of road, 9 meters wide, have been ditched, graded, and surfaced. A canal wall paralleling the road, 1.22 meters high, 0.61 wide, and 155 long, has been repaired. Plans are in progress for a reenforced concrete trade school and jail at Lucena and for a trade school at Atimonan.

A gang system of maintenance is in operation on 70 kilometers of road under the supervision of the provincial foreman, who has constantly at work 5 provincial teams, 8 carabao carts, and a force of 40 men. The caminero system of maintenance is being established on all first-class roads.

District No. VIII.—This district comprises the provinces of Ambos Camarines, Albay, and Sorsogon.

There were completed 29 projects and 37 were in progress at the close of the fiscal year. The total expenditure thereon was ₱116,951.99.

The provincial building and the constabulary barracks, both two-story buildings of reinforced concrete and first group timber, are under construction by contract and are about 80 per cent and 75 per cent completed, respectively. The inspection of these structures has been carried out under the supervision of the district engineer. The above buildings face the provincial plaza at Albay, which, neglected for years, has been repaired and improved. At Casiguran, Sorsogon, the Wright-Shuster municipal school building, a one-story masonry structure, has been erected. At Bulusan, Sorsogon, a similar school building has been constructed. Funds for these buildings were raised from insular and municipal appropriations and by donations from interested parties.

The Governor Reynolds bridge spans the Banao River on the Guinobatan-Ligao road in the province of Albay. It is composed of three reinforced concrete parabolic arches, each of 23.4-meter span. The length over all is 83.8 meters, with a clear width of roadway of 5.5 meters. This bridge will require about 1,000 cubic meters of concrete and 29,000 kilograms of reinforcing steel. The estimated cost of the bridge is ₱40,000. The work is in progress by administration under the immediate supervision of Mr. O. D. Filley, supervising engineer. This structure will replace an old Spanish bridge built in 1860 and destroyed by an earthquake four years later. Its massive masonry approaches are about 500 meters long.

In Albay, the Legaspi-Libon road, 48 kilometers in length, and the Legaspi-Gogan road, 3 kilometers in length, have been practically reconstructed and are now first-class roads. The construction of the Tabaco-Ligao road has been described under insular roads.

The principal road projects in Ambos Camarines are:

A section of the Nabua-Bato road, 270 meters in length, has been raised an average of 0.9 meter and surfaced with 20 centimeters of rock and 10 of gravel. Minor repairs were made over the remainder of the road. The caminero system of maintenance, under which the road has steadily improved, was established as fast as it was completed. The Iriga-Buhi road, 14 kilometers long, has been rebuilt and raised from 0.4 to 0.9 meter over its entire length with volcanic rock. The first 5.5 kilometers have been surfaced with hard gravel and the remainder with about 37 centimeters of decomposed coral, which packs quickly and is satisfactory for light traffic. The caminero system of maintenance has been established on this road. The San José-Sabang road, 8 kilometers long, and the outlet for the important "Partido" hemp district, was one of the most important pieces of repair work accomplished. The Tigaon-Sagñay road, about 5 kilometers in length, has been repaired and given a surfacing of gravel and rock 15 to 20 centimeters thick. The Sagñay-Nato road, 2 kilometers in length, required heavy grading and rock surfacing. The work has been completed and the caminero system of maintenance established. Work has been commenced on the Nueva Caceres-Calabañga road, 8 kilometers in length.

A number of municipal surveys have been made in the provinces of this district. All of the provinces of this district accepted the double cedula law.

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District No. IX.—This district comprises the provinces of Samar, Leyte, and also, temporarily, District No. XII, including the provinces of Surigao and Misamis.

A total of 25 projects was completed and 44 were in progress at the end of the fiscal year. The total expenditure was ₱57,154.78.

In the province of Leyte, 7 small reinforced concrete bridges were constructed between Tacloban and Tanauan. At Panlo on the same road a steel-truss bridge of three 18.3-meter spans was purchased and erected by contract. The old masonry piers and abutments of this bridge were repaired by administration. Three steel-girder bridges, with reinforced concrete floor, two of 7.3-meter spans, and one of 9.1-meter span, were built for the municipality of Tacloban. Two 9.1-meter, steel-girder bridges, with reinforced concrete floors, for the municipality of Guian, Samar, are in process of construction.

Plans have been prepared and work is in progress by administration on a reinforced concrete addition to the provincial jail at Tacloban. The completed structure will have a modern system of sanitation and will provide a shop, additional cells for prisoners, and offices and guardrooms for the warden. Contract has been let and work is about to begin on the provincial high school and trade school for Leyte, and plans are in progress for a new provincial building.

Road allotment projects are in progress and the caminero system of maintenance had been established on the designated first-class roads in Leyte. Road surveys for allotment projects are in progress in the province of Surigao.

A sketch has been sent to the consulting architect for working plans for remodelling the provincial building of Surigao, and plans have been prepared for changes that will probably cost ₱25,000.

In Misamis the reconstruction of the Cagayan-Tagaloan road is in progress, and contracts have been let for two steel bridges, one a 21.3-meter span, and one of two 30.5-meter spans, respectively. Two 6.7-meter span reinforced concrete arches were constructed for the municipality of Mambajao.

Each province of this district accepted the provisions of the double cedula law.

District No. X.—This district comprises the provinces of Iloilo, Negros Occidental, Capiz, and Antique.

At the end of the fiscal year 74 projects were completed and 170 were in progress. The total expenditure was ₱200,167.57.

In Iloilo, 17 reinforced concrete bridges, exceeding 2-meter spans, have been built or are nearing completion; in Negros Occidental, 19, all but two of which are finished; and in Capiz one has been completed. Numerous concrete culverts have been constructed. Bridge work in this district has been done mainly by contract. Of different road projects 20 have been in progress, 9 new buildings have been built, and 7 have been repaired.

Among the important bridges constructed in Iloilo are the following:

One pile and timber trestle, 30.5 meters in length, at Loblob; two reinforced concrete arches, 75.6 meters in length, at Pavia; one reinforced concrete girder bridge, 25.8 meters in length, at Lucena; one reinforced concrete girder bridge, 26.8 meters in length, at Tigbauan; one reinforced concrete girder bridge, 13.1 meters in length, at Panangtan. Six standard 1.83 by 1.52 meters reinforced concrete box culverts with slab footing were built, averaging ₱500 in cost, and using about 25 cubic meters of concrete each.

Square steel, twisted in the shops at Iloilo, one complete turn in 12 diameters, has been used almost entirely for reinforcing.

The construction by contract of the Pavia bridge, which spans the Aganan River on the Iloilo-Santa Barbara road, province of Iloilo, is nearly completed and merits special mention. It is a reinforced concrete arch bridge of two 30.48-meter spans. The rise of the arch is 6 meters, and the intrados has the form of a three-centered curve. The length over all is 75.58 meters, and the width of roadway is 4.25. The construction of this bridge will require 825 cubic meters of concrete and 21,800 kilograms of reinforcing steel. The estimated cost of erecting the bridge complete is ₱36,000.

In Occidental Negros among the important bridges constructed are the following:

One reinforced concrete girder bridge, 14.6 meters in length, at Cabilamonan; one reinforced concrete arch, 21.6 meters in length, at Pahonocoy; one reinforced concrete arch, 13.4 meters in length, at Taytay; one reinforced concrete arch, 13.4 meters in length, at Taloc; one reinforced concrete arch, 19.8 meters

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in length, at Palampas; one reinforced concrete arch, 31.1 meters in length, at Talisay; and one reinforced concrete arch, 16.2 meters in length, at Bagunaua.

In addition to the above a large amount of culvert pipe has been built by provincial treasurers and various municipalities. There are in the district seven pipe molds which cost from ₱150 to ₱200 per mold, according to size of pipe, all turning out pipes continuously. Pipes are 1.2 meters long and are sold by the province to municipalities at ₱4.50 each. Eleven bridges have been repaired and maintained.

Extensive irrigation surveys have been made, and preliminary computations show already that irrigation is possible on six different projects, totaling 20,700 hectares, at a cost of installation varying from ₱20 to ₱40 per hectare.

Ferries have been built for three rivers in Negros and two are contracted for in Capiz. They are designed to carry 7 tons, and are pulled across the river with cables.

Municipal work has been limited, mostly on account of lack of funds. Nearly every municipality has asked for surveys and their requests have been turned over to the bureau of lands.

Work in the burned district of Iloilo has been finished. Of road 1,590 lineal meters have been graded and surfaced in this area, 3 pipe culverts and a double culvert with a tide gate were built, and about fifty small nipa houses were erected for fire sufferers. In Iloilo, the high school building has been repaired, the trade school has had an addition built and a new floor put in, and the custom-house has had the roof renewed and a pump installed.

In Bacolod, Occidental Negros, a high school and trade school with blacksmith shop have been completed according to plans prepared by the consulting architect. Changes have been made in the sanitary arrangements of the high school, and the office of the provincial treasurer has been altered. In Capiz, the old stone jail was remodeled into a high school and a new jail of reinforced concrete has been started. In Antique a fireproof vault has been installed in the treasurer's office.

In Antique the allotment project in progress is the San José-Sibalom road. It is located through low rice fields and can not be worked during wet weather. It is proposed to put on several hundred men as soon as it becomes dry enough, and 4 kilometers of track for transporting gravel have been ordered. In Iloilo the allotment project in progress is the Sara-Ajuy road, 10 kilometers long. One rock crusher, one traction engine and all necessary tools are on the road. Wagons are being built and a road roller has been ordered. In Capiz the allotment project is the Panitang-Dao road. This is a very difficult one, as the Panay River overflows its banks and, at places, water stands 2.4 meters deep over the road. The work accomplished consists of a small amount of grading and getting material out of the river for surfacing. It is also desired to get a section of track for this road. In Negros Occidental work was in progress on the Bacolod-Bago road. This road is 15.6 kilometers long, and required but little grading except for short stretches. It was surfaced for a width of 3.6 meters with 10 centimeters of gravel furnished by contract. Both subgrade and surfacing were rolled. The Jaro-Barotac Nuevo road in Iloilo is 4 kilometers in length and was built with gravel surfacing on a sand dirt foundation. Material was delivered by tramroad and push carts. No roller was used on this road. Repairs were also made during the year on several other roads.

The caminero system of maintenance has been established on all first-class roads and is installed on all new roads as fast as built. The value of the system is appreciated throughout the district, and all of the provinces thereof have accepted the double-cedula law.

District No. XI.—This district comprises the provinces of Cebu, Negros Oriental, and Bohol. At the close of the fiscal year 61 projects had been completed and 54 were in progress. The total expenditure was ₱126,281.23.

Of bridges and culverts 23 were built during the year, all of permanent construction, the most important of which are Busuan bridge, a 5-centered 12.2 meter span, reinforced concrete arch on pile foundations, and the Balinanan, a 5-centered, 7.6 meter span, reinforced concrete arch on clay foundations. Plans for 21 bridges of reinforced concrete are in progress.

During the year eight road projects were handled, among which were the following:

Of coastal road south of Cebu, 17 kilometers, and 8 kilometers of the Cebu-Toledo road were maintained, principally by the gang system. Depositories are now being built as a step toward establishing the caminero maintenance system. The surfacing of the coastal road north of Cebu is in progress and

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consists of ditching, crowning, and surfacing this section, as well as excavating a large amount of rock to reduce grades. The heavy equipment consists of a Garr-Scott traction engine and a Kelly-Springfield roller.

The provinces of Bohol and Negros Oriental have devoted practically all of their revenues to bridges, and Bohol will continue this policy for some time. Negros Oriental, however, is preparing to purchase heavy road equipment, and it should be delivered before the end of the calendar year.

Each province accepted the double-cedula law and road-allotment projects, and the maintenance of first-class roads is in progress.

Other important projects were: Repairs to provincial jail, Cebu; pipe bunks for 150 prisoners were installed; the doors of all cells and cell rooms have been changed from wooden to iron gratings; the small cross walls were removed from the jail yard, and one wall was built of cut coral facing and concrete backing. This wall is 4.9 meters high, 0.9 thick and 61 long. The galvanized-iron roofs were removed from the solitary cells and replaced with reinforced concrete. Reinforced-concrete quarters for guards and warden are under construction, and an appropriation has been made for a hospital of the same material. The Magellanes monument on Mactan Island was restored. All loose mortar joints were cleaned out and repointed. The space between the monument and fence was paved with concrete, and the whole monument was given three coats of neat cement paint and a new inscription of brass was attached.

Plans for a reinforced concrete market building at Cebu are in progress. The Cebu artesian well was cleaned by jetting out the sand that had accumulated in it and driving the pipe through this stratum of sand. The well has since been in operation for six months and shows no sign of filling. The windmill installed has not been entirely satisfactory in furnishing a sufficient supply of water.

The Opon school was the only muncipal construction project handled. It is a two-story building of coral stone wall, galvanized-iron roof, and guijo floor and roof frame.

District No. XII.—This district comprises the provinces of Surigao and Misamis. It has been temporarily combined with District No. IX, within the report of which the work accomplished in District No. XII will be found.

IRRIGATION.

The annual report of 1905 contains considerable general information on irrigation in the Philippine Islands, and subsequent reports show investigations and repairs made on the extensive Spanish irrigation systems of the friar lands now under the administrative control of the bureau of lands, and also surveys and investigations of various semiprivate projects, generally where the interests of two or more municipalities were involved. Actual construction has been limited to the friar lands estates. Conflicting interests and priority of water rights involved in semiprivate projects have delayed construction thereof, and any extensive works thereon will doubtless be postponed until the present laws relative to the use of water are supplemented by rules and regulations having legal force or until new laws are enacted.

A considerable percentage of the land area now under cultivation has been at some time diked and leveled for the utilization and conservation of the rainfall. This work represents a large proportion of the cost of installing an irrigation system.

Throughout the Philippine Islands, including the region of the non-Christian tribes, the value of irrigation in insuring one successful crop and in making two or more crops possible is fully appreciated. In many localities the construction of successive dikes of a height equal in some cases to the width of the strip of land reclaimed has been under operation for many generations, until these dikes are of a permanent type of construction. The construction of dams and main canals has been, however, of a temporary nature, except on the friar lands estates, and economy in the conservation and use of available water is practically unknown.

There was appropriated by Act No. 1688 for the construction and reconstruction of irrigation plants and systems on the friar lands estates for the bureau of lands ₱45,500. From this appropriation there was expended during the fiscal year ₱41,783.87 for the construction and repair of dams, retaining walls, tunnels, and ditches on the Imus, Lolomboy, Malabon, and Santa Cruz estates. Superintendence charges for the expenditure of the above-mentioned sum were ₱1,828.04, making a total of ₱43,611.91 expended from this appropriation.

Acts Nos. 1688 and 1837.—A new policy was inaugurated by the appropriation by Act No. 1688, dated August 17, 1908, "for the construction and mainte-

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nance of irrigation plants and systems in the provinces, subject to allotment and regulation as to use of water and charge therefor, by the secretary of commerce and police, two hundred and fifty thousand pesos: *Provided*, That this shall be a permanent reimbursable appropriation."

Act No. 1837, dated May 29, 1908, appropriated ₱500,000 under similar conditions, and Act No. 1854, originating in the Philippine Assembly, provides an annual reimbursable appropriation of ₱750,000, available July 1, 1909, and creates a division of irrigation in the bureau of public works.

Act No. 1854.—The essential features of Act No. 1854 are:

1. It creates the office of a general superintendent of irrigation, who shall have supervision and direction of the general investigations and construction of irrigation systems throughout the Philippine Islands. He shall prepare plans adequate for the establishment of an economical and complete system of irrigation throughout the Philippine Islands, for the approval of the secretary of commerce and police, and when such plans are approved he shall take the necessary steps to execute them.

2. It states the procedure upon receipt of a request from any provincial board, municipal council, barrio, or any group of inhabitants, together with a promise to pay an equitable rate for the use of water sufficient to reimburse the government within a period not exceeding twenty years.

3. Upon certification that the irrigation system has been constructed and is in working order, it provides that the director of lands shall take charge of the system and administer it for the benefit of the landowners under authorized regulations.

4. It provides that unpaid amounts shall be a lien on the property and shall be collected in the same manner as the law provides for the collection of government taxes.

5. It provides that, whenever the government has been reimbursed for the total cost of any irrigation system, charges for water throughout that system shall be rendered to an amount sufficient to meet maintenance expenses.

Irrigation committee.—These acts with their continuous reimbursable appropriations rendered it possible for the secretary of commerce and police to define a practical irrigation policy and to authorize the organization of the necessary working force, and on June 9, 1908, he appointed an irrigation committee consisting of nine members and placed in its hands the control by approval of the expenditure of irrigation moneys. This committee is instructed to submit recommendations to the secretary of commerce and police on the following points:

"1. The allotment of money for irrigation projects.

"2. Terms upon which such allotments should be made.

"3. Matters of administration and the relations between the bureau of public works and the bureau of lands.

"4. The following general conditions are to be observed:

"(*a*) The allotment of money is to be made where the greatest economic advantages can be realized. It should be allotted in regions where the greater part of the land to be cultivated is used for raising rice.

"(*b*) The lands should be conveniently situated to public highways and roads, so that the products can reach the market.

"(*c*) Other things being equal, preference should be given to those provinces which double their cedula tax for the ensuing year.

"(*d*) Perhaps the best criterion as to relative merits of the different propositions that fall within the limitations above set forth is the number of pesos that the project will cost to bring water to each hectare of land, the preference, of course, being given to that project which will irrigate the largest number of hectares for a given amount of expenditure.

"(*e*) The water is to be sold to the landowners at a price that will give ample money for all possible maintenance charges, leaving a balance to go to the capital fund. This, under the law, is reimbursable and can be used for extensions of the irrigation system. It is believed that the capital cost should not be paid back faster than at the rate of 10 per cent a year or, say, the total cost in ten years. The plan of taking a percentage of the crop is strongly recommended. Twenty per cent is customary, according to reports, in Louisiana and California. If this will repay the capital cost too rapidly 15 per cent would be satisfactory.

"(*f*) The title to these projects should be vested in the government. Where the land is deeded or, better still, existing irrigation works, such as ditches,

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etc., are deeded to the government consideration should be given in the percentage of the crop taken from the owner of the property, particularly if he had an irrigation plant of his own before.

"(*g*) The bureau of public works will construct the irrigation plants and the bureau of lands will administer the sale of water, collecting the rent, and having general charge of the maintenance, etc., exactly as is done in the case of the friar land estates."

To temporarily meet the expenses of this organization the secretary of commerce and police on June 15, 1908, from the ₱250,000 appropriated by Act No. 1688, allotted ₱50,000 to be expended "for engineering and surveying expenses in connection with the investigation of irrigation projects; for minor repairs of existing irrigation systems; and for the expenses of the committee on irrigation as follows: For the purpose and hire of transportation equipment; for the operation and maintenance of transportation equipment; for transportation and per diem expenses; for engineering, clerk, draftsman, and stenographer hire; for printing and purchase of maps, books, and other printed matter."

The general committee is subdivided into subcommittees on land, on business, and on engineering. Several meetings of the general committee and its subcommittees have been held. Many projects have been presented, studies of which, together with the collection of hydraulic and irrigation data, are in progress at the close of the fiscal year.

Investigations.—Since the resignation in February, 1907, of Mr. H. F. Labelle, assistant engineer, in charge of the division of hydraulics, there has been no regular hydraulics or irrigation division in this bureau until the 1st of April of this year, when Mr. H. B. Kirkpatrick, assistant engineer, was appointed irrigation engineer. Since that time the work of organizing and increasing this department to meet the present demands has been carried forward, and it has been merged for the present into the irrigation division provided for by the law above cited. There are now assigned to the work of investigations four assistant engineers, together with such rodmen and survey men as are needed. Plans have been made to put in the field six or eight complete investigation parties. Equipment and survey instruments have been ordered and authority has been received and requisitions made for the employment of twenty-six engineers, some of whom will arrive within a few weeks.

The collection of hydraulic data which will be necessary for the intelligent design of irrigation structures is in progress. Gauge boards, current meters, and other equipment necessary for measuring the discharge of rivers have been ordered. Instructions, both for gauging rivers and for field parties and for those in charge of irrigation surveys, have been prepared. As fast as men are available parties can be put into the field for the purpose of securing hydraulic data and investigating irrigation projects. Various minor investigations have been carried on during the year, and the reports thereon have been referred to the irrigation committee. Preliminary investigations have been made on fifteen projects. Tabulation H attached hereto shows the location of these projects, and, in part, their relative magnitude.[a] Invesigations are now in progress on projects known as the Ambalanan-Dalim in the province of Pangasinan, which are expected to serve up to 12,000 hectares of rice lands; on the Bago project in Occidental Negros, which is expected to serve in the neighborhood of 8,000 hectares, and upon two projects in the province of La Union, one at Balaoan and one at Bacnotan.

The most pressing need at present is a suitable law relative to the control of water, to irrigation systems, and to the reimbursement of funds loaned by the insular government for the purpose of repairing or reconstructing irrigation systems. Without such laws, or regulations having the legal force of laws, it will be almost impossible to proceed beyond the mere investigation of irrigation projects.

Tabulation I shows agricultural data compiled from the Philippine census, 1903, of value in determining the equitable distribution of allotment funds.[a]

ARTESIAN WELLS.

Data relative to the subject of artesian wells have been submitted in the previous reports of this bureau.

Requests for artesian wells are constantly increasing in number and have been in many cases accompanied by resolutions of interested provinces or munici-

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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palities to pay the expenses incurred in drilling those proposed. The sanitary value of artesian water as compared with water from the usual surface sources is appreciated by a large proportion of the municipal officials. The probabilities are that until more wells have been drilled and more extended information is obtained regarding the extent and capacity of the underground supply the use of artesian water should be directed to domestic purposes and the tendency to drill wells for irrigation purposes only should be checked.

Work during the past year has been conducted principally under the authorization contained in Act No. 1662 as amended by Act No. 1688. Act. No. 1662 provides for

"a permanent reimbursable appropriation to the credit of which shall be deposited the sum of thirty-seven thousand pesos hereby appropriated, together with receipts which may accrue from insular bureaus, provincial and municipal government, and other sources on account of services rendered and supplies furnished in sinking artesian wells and, when required, equipping said wells with the necessary pumping machinery, storage tanks, and so forth, necessary to provide potable water or fire protection, or both, when demanded by the public interests: *Provided*, That the selection of projects and determination of rates to be charged shall be made by the director of public works with the approval of the secretary of commerce and police: *And provided further*, That the rates charged shall not exceed such as may be necessary to reimburse this appropriation on account of expenses, exclusive of unsuccessful projects, the entire expense of which shall be reimbursed to this appropriation from the appropriation for current expenses of the bureau of public works, which are hereby accordingly made available for such amount as may be necessary."

The total amount available under the above act is ₱37,000, of which ₱20,426.96 represent plant and equipment, leaving ₱16,573.04 available for operation and a rotating fund. The total cost of the wells drilled during the past year aggregated ₱27,861.22, which will be refunded to the operating fund from the amount appropriated by Act No. 1837.

The first deep-well outfit was received in August, 1904; the second in September, 1907, and the third in May, 1908. Heavy standard drive pipe, having approximate diameters of 15, 20, and 25 centimeters, has been used.

Requests for drilling wells at the close of the fiscal year numbered 44, as compared with 27 at the beginning thereof.[a] On account of the increasing number of requests for wells pending and the importance for sanitary reasons of drilling them at an early date, attempts to interest contractors in drilling wells have been continued, but without practical results.

Data secured by the deep-well outfit in the provinces of Bulacan and Pampanga suggested the possibility of economically drilling wells of a smaller size with a jet outfit. The treasurer of Bulacan, Mr. R. W. Goodhart, constructed such an outfit and successfully jetted down several small wells, using pipes of 5 and 7.5 centimeters in diameter. A jet rig was designed and constructed by this bureau at a cost of about ₱900, capable of jetting down pipe of 5, 7.5, and 10 centimeters in diameter to a depth of about 100 meters in soft material. This rig has been so successfully operated in those regions where the stratification encountered and the depth of the water-bearing stratum had been demonstrated by the deep-well rigs as suitable for the jetting process that the construction of other jet outfits is in progress.

On account of the numerous cases of cholera existing in some of the provinces, arrangements are in progress with the bureau of health whereby, regardless of the priority of requests, wells be drilled in afflicted regions in accordance with the sanitary necessities of the case. It has been clearly demonstrated that in regions furnished with artesian water the decrease in enteric and water-borne diseases has been notable, the control of cholera by the board of health has been made far more efficient, and in some localities the death rate has been decreased as much as 50 per cent.

Provincial and municipal officials have been enthusiastic over the possibilities of artesian wells, and the opinion is becoming widespread that the artesian well will furnish a cheap and effective solution of the problem of irrigation. A decrease in the discharge of flowing wells has already been noticed in localities where the water-bearing stratum is relatively close to the surface and where several wells have been drilled. The use of artesian wells for irrigation

[a] A table showing requests in detail has been omitted and filed in the Bureau of Insular Affairs, War Department.

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purposes should be discouraged throughout all the thickly populated areas of the islands on account of their primary value for domestic use.

Under the reimbursable provisions of Act. No. 1662 as amended the following

1. The provincial board of municipal council desiring a well is requested to pass a resolution guaranteeing the cost of the well, providing that the well is successful. A successful well is one which flows or will pump with ordinary suction pumps approximately 100 liters per minute of water chemically suitable for domestic purposes.

2. The well must be located on government land of clear title or perpetual lease.

3. The local health officer and the officials interested are requested to approve the location of the well.

4. Wells are drilled in the order that guaranty resolutions are received, and as nearly as economical routes can be arranged for each well rig, except in extreme cases, such as epidemics or water famine.

5. The cost of a successful well shall include the cost of the following items:

(*a*) Transportation from the previous well site to the site of the well desired.

(*b*) Salaries and wages for the period beginning with the completion of the dismantling of the rig at the site of the well previously drilled to the completion of the dismantling of the rig at the site of the well desired, except in case the rig is laid up for repairs for more than twenty-four hours. In case the rig is laid up for any reason and the time can be utilized for making repairs, the time shall be charged against maintenance and repairs.

(*c*) Materials and incidentals.

(*d*) Maintenance and repairs to be prorated among wells in the province in which the rig is working.

(*e*) Chemical and bacteriological analysis.

(*f*) Deterioration of plant.

6. No charge is made for superintendence.

Printed instructions have been prepared and issued to well drillers relative to location, records of force employed, samples of stratification encountered, pumping tests, sampling water for bacteriological and chemical tests, and records of cost, including repairs and deterioration of plant.

The average cost per meter of the 28 wells drilled to date and averaging 89.11 meters in depth was ₱29.14. The average cost per meter of the 9 wells drilled during the past fiscal year and averaging 110.9 meters in depth was ₱27.92. The average cost per meter of the 6 wells drilled in Bulacan Province during the past fiscal year, averaging 117.1 meters in depth, was ₱24.42. The drilling of 4 wells was in progress at the close of the fiscal year.[a]

The following table shows the percentage distribution of cost items for wells drilled in the provinces of Bulacan and Pampanga:

	Per cent.
Salaries	31
Labor	13
Transportation	3
Casing	30
Maintenance and incidentals	23

Act No. 1837, dated May 29, 1908, contains the following appropriation:

"For the drilling of artesian wells in the provinces, including the cost of new equipment, and of pumping plants where necessary, to be allotted by the secretary of commerce and police, one hundred and fifty thousand pesos: *Provided*, That this sum shall also be available to pay pending bills for wells already driven."

Work accomplished under this appropriation has been limited to preliminary work pending the completion of regulations relative to this appropriation and the allotment of funds by the secretary of commerce and police.

MISCELLANEOUS WORK.

Additional to the works heretofore described several authorized inspections and investigations have been made and various committees have been appointed by executive order or otherwise which demanded attention from the personnel of this bureau. One of the most important committee works performed was the preparation of specifications for Portland cement. The specifications heretofore in use were based on those prepared by the Board of Engineer Officers,

[a] A table showing the number of wells completed has been omitted and filed in the Bureau of Insular Affairs, War Department.

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United States Army, dated June 6, 1901. The specifications now in use by all branches of the civil government, approved by the governor-general under date of May 27, 1908, and since printed, were abstracted from the report of a joint committee embracing representatives from the American Society of Civil Engineers, American Society for Testing Materials, American Institute of Architects, Engineer Department of the United States Army, Association of Portland Cement Manufacturers, and American Railway Engineering and Maintenance of Way Association, with minor abstracts from Taylor and Thompson's work on "Concrete, Plain and Reinforced," and modified to meet the climatic conditions in the Philippine Islands.

GENERAL OFFICE.

The number of records and communications handled by the record division has increased about 60 per cent over that of the preceding year, and the cost of operation of the division has increased about 40 per cent. The number of records handled by this division during the last three years was as follows: 1906, 16,204; 1907, 19,832; 1908, 32,732.

Act No. 1792, passed October 12, 1907, abolished the office of the insular disbursing officer and provided that all bureaus pay their obligations with treasury warrants, subject to pre-audit by the insular auditor before being forwarded to the creditor. This scheme has been working satisfactorily, and has reduced the amount of papers which formerly burdened the files of the bureau and the necessary labor required to accomplish such extra papers. It has reduced the number of ledger accounts for each appropriation formerly handled by the disbursing officer and confined them to one account for each appropriation. It also enables this bureau to determine available balances with more rapidity and accuracy than formerly. Under the provisions of this act the insular auditor issued a circular setting forth a classification of accounts covering all governmental expenditures. This bureau has followed the required classification since its receipt, but has not been able to revise the expenditures made prior thereto.

Cash disbursements in the city of Manila have been handled by Mr. F. S. Douglass, chief clerk and cashier, without increasing the office force. All collections, other than inter-bureau vouchers, and the custody of the contractors' guarantee funds, have been handled by him. The total amount of funds handled during the period from November 1, 1907, to June 30, 1908, is as follows:

Disbursing account	₱211,304.49
Collection account	29,229.53
Contractors' guarantee funds	20,643.10
Total funds handled	271,177.12

The handling of property and engineering supplies and records connected therewith are also increasing, although the same has been greatly facilitated by the consolidation of the several storerooms located in various parts of the city into one main warehouse. This consolidation has also reduced the cost of transportation required. The number of property issues and receipts during the year has practically doubled that of last year, 6,514 issues having been made during the fiscal year 1908, against 3,000 during the fiscal year 1907. The value of property handled during this year and 1907 is as follows:

	Fiscal year 1907.	Fiscal year 1908.	Increase, per cent.
Purchased	₱87,228.57	₱216,084.34	147.7
Expended	95,731.15	157,770.74	64.8

The cost of operating the property division is practically unchanged, notwithstanding the large increase in property handled.

The cost accounting system has been extended over the most of the divisions of the bureau. The method of cost keeping for projects under the direction of the district engineers has been revised and approved by the insular auditor. The installation of this method in all districts has not been effected on account of the lack of clerical assistance in some district offices. It will be enforced at an early date. The installation of this system, together with increased appropriations and a corresponding increase in the number of projects and of employees, has considerably increased the work of the accounting division.

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A comparison of the number of vouchers handled and the sum of money involved during the two preceding years follows:

	Fiscal year 1907.	Fiscal year 1908.	Increase, per cent.
Number of vouchers	2,272	3,463	52
Number of interbureau vouchers payable	204	466	128
Total	2,476	3,929	59
Amount of money involved	₱754,982.24	₱1,721,401.08	128

This increase in the work of the division has been handled by an addition to the force of three Filipino employees, while the annual cost of the division has been increased ₱3,020, as shown below:

Fiscal year 1907, 5 clerks, total salaries	₱10,520
Fiscal year 1908, 8 clerks, total salaries	13,540
Increase, per cent	28.7

The salaries and wages of the employees under the direction of the consulting architect and all contingent expenses of his office are paid from funds provided this bureau by the general appropriation bill. Arrangements have also been made with the consulting architect for the installation in his office of the cost-accounting system effective July 1, 1908, and it is expected that the receipts for the preparation of plans and specifications for public buildings will increase the income of this bureau.

In the drafting division 352 tracings and 18,218 prints were made. A coating machine for preparing blueprint paper has been constructed on account of the deterioration of blueprint paper purchased in the States. Of blueprint paper 16,800 square yards were coated. Of this amount about 9,850 square yards were furnished to other bureaus and offices. At the present time the bureau is coating the larger portion of the blueprint paper used by the insular government in the Philippine Islands, and has also coated some paper for the United States Army. The results obtained with slow-printing solar paper have been satisfactory, but up to the present time a satisfactory "rapid-print" paper for use with electric printing machines has not been secured.

The total leave taken by employees was about 29 per cent of that earned and which could have been taken had the employees so desired. The following statement shows the number of days of leave earned and taken:

	Earned.	Taken.	Approximate percentage taken.
	Days.	*Days.*	
Vacation leave	3,112	1,238.5	31
Accrued leave	3,318	619	18
Total	6,430	1,857.5	29

The number of classified employees of the bureau has increased about 37 per cent, or from 184 employees on June 30, 1907, to 272 employees on June 30, 1908.

The operations of this bureau are closely connected with the bureaus of supply, audits, and civil service. The increased purchases required during the year have suggested the advisability of larger flexibility in the purchase of supplies available in the local markets, a complete specification of supplies and material purchased in the United States with respect both to quality and method of packing and a more scientific and rigid system of testing and inspecting, especially of building materials. Relative to the temporary force and unclassified service, it has not been possible to secure at reasonable wages a sufficient number of qualified and reliable skilled laborers, inspectors, overseers, and foremen to meet the needs of the service. This difficulty has been intensified since active construction began on the new railway system. Moreover, it has not appeared advisable to undertake to secure this class of employees from the United States, and a policy of training available men for this important part of the service has been continued.

The employees of this bureau have accepted in many cases unduly heavy responsibilities and they have discharged their duties with interest and efficiency.

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Attached hereto are detailed financial statements of funds under the supervision of this bureau with amounts expended and purpose and photographs of various works completed or in progress.[a]

Respectfully submitted.

J. W. BEARDSLEY,
Director of Public Works.

The SECRETARY OF COMMERCE AND POLICE,
Manila, P. I.

FINANCIAL STATEMENT.

BUREAU OF PUBLIC WORKS.

Insular appropriation, Act No. 1679		₱627,300.00
Receipts from operation, fiscal year 1908		125,000.00
Receipts from operation, fiscal year 1908 (construction of a storehouse at Baguio, Benguet)		1,500.00
Receipts from operation, fiscal year 1908 (maintenance of the Benguet road)		7,000.00
Receipts from operation, fiscal year 1908 (construction of a stable for the governor-general, Baguio)		1,500.00
Total receipts from operation, fiscal year 1908	₱119,745.13	
Accounts receivable, fiscal year 1908	38,132.69	
Services rendered uncompleted projects, fiscal year 1908	135,179.87	
Total revenue, fiscal year 1908	293,057.69	
Less authorized expenditures from receipts from operations as noted above	135,000.00	
		158,057.69
Total amount available for expenditure		₱920,357.69

EXPENDITURES.

Salaries and wages	₱421,032.73	
Labor	95,851.78	
Material	98,619.50	
Office supplies	14,534.46	
Transportation	49,608.21	
Subsistence	32,641.27	
Per diems	20,239.84	
Postage and telegrams	3,857.62	
Cablegrams	309.90	
Horse keep and forage	4,454.86	
Telephones and operators	5,235.50	
Ice, water, laundry, electric current, janitor's supplies, pail system, and incidentals	21,267.88	
Incidentals, including rent, periodicals, and miscellaneous expenses	2,226.75	
Outside contracts	27,585.06	
Purchase of equipment	53,912.02	
Maintenance of equipment	3,494.43	
Outstanding obligations	16,487.29	
Total expenses fiscal year 1908		871,359.10
Surplus after all outstanding accounts and charges for services rendered on uncompleted projects are collected		48,998.59

PRIOR FISCAL YEARS.

Balance carried over from Act No. 1527	50,000.00
Expended during this fiscal year	49,942.64
Balance	57.36

[a] The detailed financial statements, together with all the photographs but two, have been omitted and filed in the Bureau of Insular Affairs, War Departme-

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EXHIBIT D.

THE PRESENT ROAD POLICY.

[Letter of the secretary of commerce and police to all provincial, municipal, and other officials relative to the present road policy in the Philippine Islands.]

DEPARTMENT OF COMMERCE AND POLICE,
Manila, June 16, 1908.

SIR: The roads and highways of the Philippine Islands are in a very lamentable condition, and it is my belief that these islands can never expect any real measure of prosperity until a complete change has been made in the system of road construction and maintenance; one which will provide not only for the construction and repair of all necessary roads but for their continuing maintenance thereafter.

I think everybody admits the necessity of roads, yet a few words in regard to the inherent need of good roads will not be out of place in this letter.

No matter how rich, fertile, and productive land may be, the owners and inhabitants of it can only realize a fraction of its value if there is no market for its products. They are thrown back into the primitive state of living where each person instead of producing the things which he can produce most economically and selling them, and with the money buying the things which others can produce economically, will produce for himself a poor class of cloth, a poor class of food, a poor class of shelter, and practically none of those other things which people manufacture and sell and which tend to make modern life agreeable. The construction of a road immediately puts the vigor of life into the agriculture and industry of the region which it opens. Its produce can then be taken out and sold, and the produce of other parts can be bought and brought in. The better the road the more prosperous the province. If the road is smooth, level, well crowned, well drained, and well surfaced, and provided with suitable bridges and culverts, one carabao can haul out four or five times as much produce on a cart as he could if he had to drag the wheels through mud, in and out of holes, down into rivers, and up steep banks on the other side. The impetus which a good road gives to industry makes the products increase so rapidly that by and by a tramway or railroad will be induced to come in, thus giving additional impetus to the development of the territory reached. The railroad, however, does not do away with the necessity for roads; it merely accentuates it. The railroad does not stop at every house and field to pick up the products; it stops at the stations where its agents are placed, and these can only be reached by means of the roads, so that the road becomes still more important than before. Although each load may not make so long a journey, yet there will be many more loads making short journeys to reach the railroad stations. History shows that all well-governed countries pay great attention to their roads, and, in fact, it can be taken almost as an axiom that the merit of a government and the degree of efficiency of its administration can be measured by the condition of the roads.

Everybody knows that Napoleon is considered one of the greatest administrative officers that ever lived, a man of unequaled genius; and yet of the administration of Napoleon the most noteworthy things which remain to-day are the roads which he built. Napoleon knew the value of roads and built royal highways stretching from France to Italy and throughout the other countries which he ruled. We can not do better than take a lesson from the past; we can not do better than imitate the good things in the work of the great men whose lives we can read; and we can not do better than imitate, each in his little way, that part of the great work of Napoleon which lies within his power to perform. So each provincial governor, each municipal president, can make himself a name for good administration by devoting a sufficient part of his

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energies to the problem of good roads in his district, so as to give to the people whom he represents the benefits which come from good roads.

Looking back over the American administration of the Philippine Islands, we see great strides made in the matters of health, justice, finance, public works, education, railroad building, water transportation, wharves and harbors, lighthouses, etc., but we do not find a corresponding record of accomplishment in regard to the construction and maintenance of roads.

It is well to analyze this condition of affairs to ascertain its cause. In the United States the construction and maintenance of roads has until recently been almost exclusively left to the officials and governments of the towns and counties, which in each State correspond to the municipalities and provinces here. Therefore it was natural for the insular government to adopt this plan at the beginning, in the Philippines, and to leave the duty of road maintenance wholly to the provinces and municipalities. The people wanted self-government and the opportunity to show that they were fitted to manage their own affairs. The insular government undertook a certain amount of road construction, but after the construction was completed, or semicompleted, the roads were turned over to the provinces on the understanding that they were to undertake the maintenance. No definite system or rules in regard to this maintenance were established, nor were the road and bridge funds of the provinces sufficient to provide for an adequate system of maintenance and construction. The record has been most unfortunate. One example of bad maintenance, of which almost every province can furnish illustrations, will not be out of place here. Many thousand bridges and culverts in the Philippine Islands to-day are lying, with the stone of which they were made by the Spaniards, exposed to the action of the wheels of passing carts and carriages. Each cart and carriage passing over these bridges delivers a destructive blow to the crown of the bridge, which blow is damaging to the cart and damaging to the bridge. In a comparatively short period of time these bridges or culverts will fall in—many of them have already done so—and then the average cost of replacing them will be from fifteen or twenty to one hundred times what it would have cost to have covered the approaches with gravel and the crown of the bridge with good road-surfacing material. Five or 10 pesos expended in depositing road material would protect a culvert for several months, whereas several hundred pesos will be necessary to repair it once it is broken through by the action of wheels. One would expect local officials to think out these things for themselves and look after the interests of their own people by expending their money in a way to remedy these evils; but up to date there does not seem to have been any appreciation of this important matter, and the number of places where this evil still exists is disgracefully large.

The blame for this condition of affairs lies partially with the provinces and municipalities and partially with the insular government. The whole of the blame can not be placed upon either. It is true, however, that the cheapest system of road maintenance, the one which provides for the best condition of road for the least money, was not fully adopted in any province, although a few provinces tried it in spots. Under General Wood, in the Moro Province, the record is the best. There the construction was good, and all roads which were constructed were maintained under an economical system of maintenance. But in the other provinces not only were the roads which were constructed by the insular government and turned over to the provinces not cared for, but the roads left from Spanish days were also allowed to fall into such disrepair that many of them were impassable at any time of the year, and most of them became impassable during the rainy season. Whole provinces thus retrogressed, and a condition of affairs arose which necessitated drastic action to prevent the Philippine Islands from remaining in a permanent, hopeless poverty. The action needed was:

(1) Provision for raising and appropriating sufficient money for the maintenance of all existing good roads and the construction of needed new roads;

(2) A system of road construction of permanent and durable type of such nature that it will remain serviceable for the longest time for the least money; and

(3) A system of maintenance such that we shall keep in good condition all roads and bridges that we have.

In brief, a system was required which would provide an adequate system of roads and which would not permit the deterioration of any road property.

The first measure undertaken after my arrival was the passage of the road law, Act No. 1511, which enabled the provinces and municipalities to compel five

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days' labor of every able-bodied man on the road or to pay in default of labor the commuted value thereof as fixed by the provincial board. This law was to be in effect when accepted by the convention of municipal presidents and councilors. The law was not adopted by any province.

The next was the passage of Act No. 1617, enabling the provinces to put a toll on any roads or bridges, the money to be used for the maintenance of the same. This is in itself a rather objectionable measure, because upon the freedom of the use of the roads depends the freedom of the people, and there is nothing more insidious and dangerous than a system of internal revenue that tends to impede transportation.

The next measure was the passage of Act No. 1652, authorizing the provincial boards to double the cedula tax, the additional money to be used wholly for roads and bridges.

The fourth was the passage of Act No. 1695, providing that 10 per cent of the internal revenue should be added to the road and bridge fund of those provinces that doubled their cedula tax in proportion to population; thus each province that doubles the cedula tax gets in addition to the increased receipts of cedulas a large sum of money from the internal revenue. If any provinces do not double the cedula tax, their share in the additional 10 per cent is divided among those that do. Of thirty-one provinces organized under the provincial government act all but four doubled their cedulas for the year 1908.

In addition to all the money thus made available for roads and bridges, the sum of ₱1,321,225 was appropriated by Act No. 1688 for use in the year 1908, of which ₱821,225 were for specific projects and ₱500,000 to be distributed by the secretary of commerce and police among the provinces for the purpose of road and bridge construction. The law provides that no province shall receive any money from this fund that has not provided an adequate system of road maintenance. Acting under the authority of this law, the undersigned prepared a form of resolution to be adopted by the provinces, which all the provinces that doubled the cedula tax have now adopted. This provides for a complete system of road maintenance, known as the "caminero system." Each road is to be divided into sections under a capataz, and each section is to be further divided into subsections, each of which can be properly maintained by one man working on it all the time. Each subsection has one man who is responsible for the good condition of that subsection. He is provided with a badge to indicate his office, giving the name of the province, the name of the road, and the number of the section. He is given the necessary tools and implements, and he is to live in a house adjoining his subsection and to spend the whole of his time on the road work. At stated distances along the road there are to be deposits of road material, approved by the district engineer, and no material except such as is thus deposited can be used on the road. The caminero thus has the means at hand to properly look out for the reasonable wear and tear of the road. It is his duty to keep the vegetation from encroaching; to keep the ditches and culverts clear, so that the water can run off; to keep the surface of the road crowned, so that the water will not lie on the road; to fill all ruts and depressions in the road with broken rock or other approved material, so as to make drainage perfect and to prevent the beginning of trouble; to keep the road clean and unobstructed, and to protect it against encroachment by neighbors in the way of putting their fences or parts of their houses over it, or the use of the ditches for irrigating purposes or for carabao wallows. He will protect the road from misuse and keep it continually in good condition. The resolution, or law of maintenance, adopted by the provincial boards provides that an average of ₱350 a kilometer a year shall be expended on all first-class roads and that there shall be, during the dry season, one caminero for an average of 2 kilometers and, in the wet season, one caminero for an average of 1 kilometer of road. This, it is expected, will solve the problem of maintenance. In order to incite capataces and camineros to more active vigilance, it is proposed to give prizes and medals to the capataz and caminero who have the best section and subsection.

Let us now look at the financial side of this proposition and compare results to be obtained under this new system with those that prevailed before. On the one hand, we have a system of an average expenditure of ₱350 a year on each kilometer of first-class road. On the other, we have the system which has prevailed up to date; that is, to spend no money on maintenance and let the road be worn down either by passage of vehicles or by the ravages of the elements into an impassable quagmire in the wet season. This finally

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SAN MIGUEL-SIBUL SPRINGS ROAD, SHOWING COMPLETED ROADWAY, PROVINCE OF BULACAN.

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SAN MIGUEL-SIBUL SPRINGS ROAD, SHOWING COMPLETED ROADWAY, PROVINCE OF BULACAN.

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necessitates the devotion of a large sum of money for the reconstruction of the road. The figures which we have been able to gather indicate that it costs between three and four times as much to reconstruct a road every three or four years as it does to maintain it each year at the average cost of ₱350 per kilometer.

Reports from the engineers indicate that in the Philippine Islands the fair average cost of reconstructing a kilometer of road, exclusive of bridges, will be ₱6,000. Wherever, however, an entirely new road is constructed the average cost per kilometer, exclusive of bridges, will be at least ₱9,000, and very likely more. The same reports also indicate that the sum of ₱350 per kilometer for the maintenance of first-class roads is a rather low figure, and that the average cost of maintenance will run somewhat higher. An average of ₱350 per kilometer, therefore, is to be regarded as the minimum amount which the province should spend on the maintenance of first-class roads, and wherever a road is subject to heavy traffic it will certainly cost more to maintain it properly. In the restoration of old roads or the construction of new ones every effort will be made to locate them in places where traffic is heaviest, as those are the places where roads are most needed, and on such roads. as already indicated, the average cost of maintenance will exceed ₱350 per kilometer a year.

In the figures which follow, if ₱9,000 per kilometer were substituted for ₱6,000, it would accentuate the argument which is therein made and demonstrate more conclusively the utter folly of the old system as compared with the new system described above. I have, however, preferred to use ₱6,000 because it demonstrates my point sufficiently and because, in sections where it may happen that the cost of a road is less than ₱6,000 per kilometer or the cost of maintenance is more than ₱$350 per kilometer, those who read this letter will not be led to believe that I am exaggerating for the purpose of making a point.

Let us take the hypothetical case of a province that has ₱100,000 a year in the road and bridge fund, obtained by doubling the cedula tax, and so receiving the increment from the internal revenue. Let us suppose that this province has 100 kilometers of first-class road, which, at a valuation of ₱6,000 a kilometer, means an invested valuation of ₱600,000 in roads. Let us estimate that, without maintenance, we are going to lose one-fourth of our road each year, because we find that four years without maintenance means the practical ruin of the road if it has to support any heavy traffic. We therefore have the following comparative figures:

(*a*) *Under the caminero system.*

Road and bridge fund of the province	₱100,000
Cost of maintenance of first-class road, 100 kilometers, at ₱350	35,000
Balance available for new construction	65,000
Cost of constructing 11 kilometers of new first-class road	66,000
Value of road at the beginning of the year, 100 kilometers, at ₱6,000	600,000
Value of road at the end of year, 111 kilometers, at ₱6,000	666,000

In this year it will be seen that, besides maintaining all existing first-class roads, we have added 11 kilometers of new first-class road.

(*b*) *Under the old system, or lack of system, we take the case of a province which "can not afford" to maintain its existing good roads because it is so desirous of adding new.*

Road and bridge fund of province	₱100,000
Construction of 17 kilometers of first-class road	100,000
Kilometers of road at beginning of year	100
Kilometers of road constructed	17
Total	117
Deduct 25 per cent of existing roads lost by deterioration (25 per cent of 100 kilometers of first-class road), equals the equivalent of	25
Equivalent length of good road at the end of year	92

a loss of the equivalent of 8 kilometers during the year.

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It will thus be seen that by this system we have expended ₱100,000 and lost the equivalent of 8 kilometers of road. As 8 kilometers of road are valued at ₱6,000 a kilometer, or ₱48,000, we are ₱48,000 worse off than we were at the beginning of the year, before we spent any money at all.

The relative merit of the two systems can now be easily computed. By one we have gained 11 kilometers of road; by the other we have lost the equivalent of 8 kilometers; a difference of 19 kilometers, which represents a value of ₱114,000 in favor of the new system.

Nor is this the only advantage. As we have before indicated, by keeping the road in repair its value to the community will be very much greater than it could possibly be were it to be allowed to fall into disrepair. Over a good road properly maintained a carabao and cart can haul four or five times the load it can over a bad road or one poorly maintained. Under the new system you have a good road all the time, whereas under the old you have a bad road most of the time; and the figures which have been given as the difference in value to the provincial and municipal treasuries are only a fraction of the difference of value to the people who use the road and to the communities dependent upon it.

In wealthy countries, where the people are rich, prosperous, and progressive, where there are great accumulations of capital, many railroads, and great manufacturing plants, mines, and other industries valued at millions of dollars, it is possible that the community can afford an uneconomical system of road development and maintenance. Here conditions are exactly the opposite—the people are poor, industries in their infancy, railroads in most parts nonexistent, and the number and the extent of the manufactories very small. Here we can not afford to make mistakes; we can not afford to lose money; we can not afford to have roads which have cost us ₱6,000 a kilometer drop back through failure to properly care for our property. If by spending ₱350 a year on each kilometer of road we maintain at its highest efficiency our property valued at ₱6,000, we are only spending about 6 per cent of the cost value of the road for maintenance. By not spending it we are losing an estimated value of ₱1,500 a year, or 25 per cent as a direct loss to the treasury, and, as we have seen above, are suffering an indirect loss to the community of a very much larger sum.

Provincial governors and municipal presidents are responsible to the people who elect them for the care they take of the property intrusted to their charge. What answer can a provincial governor give to the people who will ask him what he has done toward the maintenace of the road, so necessary and vital for their existence? They will say, "When you took hold there were 100 kilometers of first-class roads, valued at ₱600,000. We paid you ₱6,000 a year to look after our property, and we find, through lack of maintenance, in the two years which you have held office that there has been a loss of ₱1,500 a year on each kilometer of road you were supposed to care for, or ₱150,000 a year—in your two years, ₱300,000 of value, or fifty times the amount of your salary in loss to the province. In order to put these roads back in the condition in which they were when you found them we should have to spend the sum of ₱300,000, or the whole of our road and bridge fund for a period of three years, and we can not spend the whole of our road and bridge fund for construction, as some of it is needed to maintain what first-class road we have left. Your reply that you spent ₱100,000 each year to build two or three very necessary bridges does not justify you in permitting a loss of one and one-half times that amount each year through lack of a little intelligent expenditure of money in maintenance."

In other words, the first use of the road and bridge fund must be always the maintenance of what we have. The policy should be adopted that any governor, or other provincial official, or any municipal president, or any officer of the government charged with the maintenance of a road who allows it to deteriorate when he could have maintained it should be summarily removed from office and somebody else appointed who will more properly perform the duties with which he is charged.

In order to bring this matter very clearly before the central authorities it is proposed to establish in the bureau of public works a system of ledgers by which there will be one page for each section of first-class road in each province. Upon this page will be placed in cold, hard figures the cost of replacing the section at the present prices of labor and materials. Each item in this section of road will be entered at its true value; grading, ditching, surfacing, bridges,

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and culverts each with its separate value. Once every three months it is proposed to make a complete examination of all first-class roads of each province by some independent expert, who will know the value of the road as he sees it and the value which the road is supposed to hold upon the books. He will return to the central office a report telling in detail the condition as he finds it. He will say, in cases where proper maintenance has not been established: "I find on kilometer —— of such and such a road the surfacing has been allowed to come off; the culvert No. —— and the crown of rock of which the culvert is made is exposed to the action of the wheels. If this is not remedied within a certain length of time the culvert will be lost and the cost of ₱——— will be necessary to replace it. The cost of resurfacing so as to prevent this contingency will be ₱———. I find culverts Nos. ——, ——, and —— partly filled with earth, vegetation, or floatage. I find the vegetation encroaching on ditches in kilometers —— and ——. In this kilometer there is a deterioration amounting to ₱———. It is evident that the officer in charge of this section is not properly performing his duty."

These reports will be sent immediately to the proper officer, warning him that it is necessary that this valuable bit of property be not allowed to deteriorate further, and that if after the next inspection the road is not found to be in proper condition, notice of the same will be sent to the governor-general with recommendation for such action as may seem necessary. In this way, and in this way only, it is believed the Philippine Islands can be brought out of the most unfortunate condition in which they now find themselves and be put upon that march toward progress and success by which the fertility of the soil, the industry of the people, and the many other advantages which the islands possess may be brought into full effect.

In closing, I think it advisable to look at the road situation in general in the Philippine Islands. We have here 37 provinces, of which 31 are organized under the provincial government act and 6 are organized under the special government act. There is, besides, the Moro Province, which has a separate form of government from any of the others, and is divided into districts. For the purposes of this letter we shall consider only the provinces organized under the provincial government act. There are also subprovinces of many of the provinces which we can disregard, grouping them with the regular provinces to which they belong and considering them as one. These 31 regular provinces include practically all the civilized and Christian Filipino people who are enjoying self-government. The total population of these provinces is 7,000,000. It is estimated that there are now about 600 kilometers of first-class road, about 6,000 kilometers of second-class road, and about 14,000 kilometers of third-class road (including trails) in these provinces. The total valuation, therefore, at ₱6,000, ₱3,000, and ₱1,000 a kilometer, respectively, is ₱35,600,000. The estimated total amount available in the road and bridge fund for the year 1908 is ₱3,300,000. Taking an average of ₱350 a kilometer for maintenance of first-class road, it will be seen that at least ₱210,000 will be necessary. This leaves ₱3,090,000 for construction and the maintenance of second and third class roads, and as our system provides for no pledged system of maintenance for second and third class roads, it is likely that the bulk of this money will be available for new construction.

It is a fair assumption that this country should have at least 1 kilometer of first-class road for every 1,000 inhabitants. This rule can not be considered to be hard and fast, because circumstances differ in different places; some provinces, like Tayabas, La Laguna, and Cagayan, are particularly favored with means of communication by water; other provinces, like Nueva Ecija, Tarlac, and Pampanga, must depend more especially upon roads and other land transportation. Taking, however, the general average of 1 kilometer for every 1,000 inhabitants, it will be seen that there is now 1 kilometer of first-class road for every 11,700 inhabitants, leaving to be constructed, in order to meet present needs, a total amount of 6,400 kilometers. At ₱6,000 a kilometer, ₱38,400,000 must be expended in the construction and reconstruction of roads before we can hope to be abreast of the actual requirements of the people. As already stated in this letter, the average cost per kilometer may be higher, with a corresponding increase in the total sum of money necessary for this purpose.

It will be seen that this year there should be available for road construction the sum of ₱3,090,000. Were this to be available each year, it would take eighteen years to fulfill the immediate requirements of the case. But even this amount each year, which is partly dependent on the provinces doubling the

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cedula each year, will not be enough, as each year will add to the amount necessary for maintenance and deduct from the amount available for construction just so much, unless there is an increase each year in the road and bridge fund. It is hoped that the resources and wealth of the provinces will increase with the construction of roads, which will result in an increase in the road and bridge fund, which will give us continually the same amount of construction, the increase being used for maintenance of the new roads as fast as constructed.

Respectfully,

W. CAMERON FORBES,
Secretary of Commerce and Police.

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EXHIBIT E.

PROPOSED RESOLUTION FOR ADOPTION BY PROVINCIAL BOARD.

Whereas there has been appropriated by Act No. 1688 the sum of ₱500,000 for roads, to be allotted among the provinces in the discretion of the secretary of commerce and police; and

Whereas the secretary of commerce and police has made an allotment of ——— to the province of ———, provided said province agrees to establish and maintain an adequate system of road maintenance of all first-class roads in the province under the terms and conditions set forth in this resolution: Now, therefore, be it

Resolved, That the provincial board of ——— hereby accepts said allotment of ——— under the following terms and conditions:

(1) That all of this allotment shall be expended under the direction of the district engineer or of an engineer detailed from the bureau of public works, for the construction and repair of such roads and bridges as shall be selected by the provincial board, with the approval of the director of public works.

(2) That all roads in this province designated as first-class roads by the director of public works, with the approval of the secretary of commerce and police, shall be maintained under a system of continuing road maintenance to be prescribed by the director of public works, which shall include, among others, the following features:

(*a*) During those months, not exceeding five months in any one year, which the director of public works shall decide to constitute the wet season, there shall be continually employed an average of at least one caminero for each kilometer of such designated first-class road in this province, and during the remaining months of the year there shall be continuously employed an average of at least one caminero for each 2 kilometers of such designated first-class road;

(*b*) Within six months after the passage of this resolution there shall be deposited along the line of all such designated first-class roads in this province not less than 50 cubic meters of broken stone for each kilometer of stone-surfaced road, and not less than 40 cubic meters of gravel for each kilometer of gravel-surfaced road. The places and amounts of deposit, the dimensions, kind, and quality of such broken stone and gravel shall be as prescribed by the district engineer with the approval of the director of public works, and the province shall deposit annually, during each succeeding fiscal year, to replenish the material taken from such deposits, 50 cubic meters of broken stone for each kilometer of stone-surfaced road and 40 cubic meters of gravel for each kilometer of gravel-surfaced road, or such less amount as may be prescribed by the director of public works upon certification of the district engineer that such less amount is sufficient to provide properly for the maintenance of each designated road during the ensuing year.

Resolved further, That a continuing annual appropriation is hereby made from the road and bridge fund of this province for the establishment and operation of said maintenance system of an equal amount of ₱350, Philippine currency, for each kilometer of such designated first-class road now or hereafter constructed and declared to be such by the director of public works, with the approval of the secretary of commerce and police: *Provided, however*, That the unexpended balance from this appropriation in any one year shall, upon the certificate of the director of public works, approved by the secretary of commerce and police, that no deterioration has taken place in such designated first-class roads of the province of ———, be turned into the road and bridge fund of said province for general road and bridge purposes.

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Resolved further, That whenever the director of public works shall become satisfied that any section of such designated first-class road has deteriorated, he shall notify the provincial government of ———, and if within one month from the time of receiving such notice such road shall not have been repaired to at least as good condition as before, the director of public works shall notify the secretary of commerce and police, who may order the work of maintenance of said road to be taken over by the district engineer.

In such event the provincial treasurer is authorized and directed to pay for said maintenance, upon accounts certified by the district engineer as true and correct, all unexpended sums appropriated, or so much thereof as may be necessary, for such maintenance of the section of road so taken over.

In case of failure of the provincial treasurer to make such payments the payment of the amounts withheld is hereby authorized to be made by the insular auditor, upon accounts approved by the district engineer, from any moneys due the province from the insular treasury.

For the purpose of this resolution, first-class roads shall be deemed to be all roads which possess substantial foundations and a durable and continuous surfacing and are certified by the director of public works to be first-class roads.

I hereby certify that the above is a true extract from the minutes of the meeting of the provincial board of ——— held at ——— on the ——— day of ———, 19—.

——— ———,
Recorder.

NOTE.—Act of the Commission No. 1688 appropriated ₱500,000 to be allotted by the secretary of commerce and police for roads and bridges in the provinces of the Philippine Islands. The secretary of commerce and police has decided to allot this money on the basis of their population to provinces—

(1) Which have doubled their cedula tax under Act No. 1652;

(2) Which have not received a special appropriation from the insular government for roads or bridges for the fiscal year 1908;

(3) Which shall have adopted the foregoing resolution.

It is believed that it is a very great waste of public funds to construct or reconstruct roads unless provision is made for their proper maintenance, inasmuch as in a very few years an expensive road becomes impassable without such a system of maintenance and the cost of the construction of such road is lost, whereas by the expenditure of only a small percentage of this amount on a proper system of continual maintenance the road should show little sign of deterioration after many years' use. Hence it is believed that the true interests of the province call for the establishment of the system of road and bridge maintenance contemplated by these resolutions on the basis above mentioned, and that no insular aid for roads should be given to provinces which are unwilling to put into effect a proper system of road maintenance.

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EXHIBIT F.

PROPOSED RESOLUTION FOR ADOPTION BY PROVINCIAL BOARD.

[Supplementary resolutions.]

Whereas there has been appropriated by Act No. 1837 the sum of ₱1,500,000 for roads and bridges, to be allotted among the provinces in the discretion of the secretary of commerce and police; and

Whereas the secretary of commerce and police has made an allotment of ——— to the province of ——— on the conditions that the said province complies with the conditions imposed by said Act No. 1837 for the allotment of said appropriation and such other conditions as are herein imposed: Now, therefore, be it

Resolved, That the provincial board hereby accepts said allotment of ——— under the same terms and conditions as set forth in the resolution of the provincial board passed on ————, whereby, in consideration of insular aid for its roads and bridges, allotted by the secretary of commerce and police, the province assumed a contractual liability to establish and maintain a continuous system of conservation for its first-class roads, and made continuing annual appropriations for that purpose; and

Resolved further, That all first-class roads within the meaning of said resolution in the province of ——— are hereby declared well constructed or improved public roads, within the meaning of Act No. 774, prohibiting the use of narrow-tired carts or sledges on such roads.

I certify that the above is a true extract from the minutes of the meeting of the provincial board of ———, held at ———, on the day of ———, 19—.

———, ———,

Recorder.

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EXHIBIT G.

REPORT OF THE CONSULTING ARCHITECT.

OFFICE OF THE CONSULTING ARCHITECT,
Manila, P. I., August 10, 1908.

SIR: In accordance with your instructions I have the honor to submit the following report for the fiscal year ended June 30, 1908:

During the period covered by this report the work below enumerated has been performed by this office.

A.

PROJECTS FOR WHICH COMPLETE PLANS AND SPECIFICATIONS HAVE BEEN PREPARED.

PHILIPPINE GENERAL HOSPITAL.

The general plan consists of a central group of buildings, including the administration, operating, and kitchen pavilions, and as many ward pavilions as can be constructed with the funds at present available, or as future needs may determine. The portion to be constructed immediately will contain 300 beds. While opinions differ as to how large a hospital may be required or can be maintained in the future, the site reserved for these buildings is large enough to permit the construction of 20 ward pavilions without crowding, and since each pavilion will contain 70 beds the ultimate limit of size would be 1,400 beds. The buildings, as now designed, have two stories, but the increasing of the ward pavilions to three stories is now under consideration, the selection depending upon economy of construction and operation. In case a three-story design is adopted the clear space between the buildings will be increased from 19 to 24 meters.

This system, as preferred to either the horizontal development by means of one-story pavilions, or to vertical development as expressed in the eight or ten story buildings in America, was adopted after a careful consideration of all the varied types of hospitals which have been advanced and rejected in the light of new discoveries in medical science during the last half century. The many-storied structure advocated in America is the logical and necessary solution for a hospital in crowded districts. In Manila the ample dimensions of the site, the expense of securing foundations for lofty structures, the prevailing sentiment against high buildings in a country subject to earthquakes, and, above all, the fact that a system capable of expansion was essential, were sufficient reasons for adopting pavilions of two or three stories as the unit.

The buildings will be constructed of reenforced concrete throughout and will be covered with tile roofs.

The group includes a free dispensary, a nurses' home, and quarters for attendants. The government laboratories, constructed in 1903, and the proposed medical school will be closely related to the hospital. The amount appropriated is ₱780,000.

CIVIL HOSPITAL, BAGUIO, BENGUET.

The site reserved for this institution is a pine-covered ridge, commanding a fine view of the Bued River Canyon and Mount Santo Tomas, and oriented in such a manner that all the wards and private rooms have the benefit of the morning sun. The hospital will be protected by higher hills toward the west, the direction from which severe storms usually come. The top of the ridge has been leveled to furnish a convenient and proper setting for the buildings.

The main building is 60 meters in length, the wards being at the ends and the operating and administrative rooms in the central portion. The second floor contains six private rooms. The construction is of Benguet pine, with masonry foundations and chimneys of reenforced concrete. The amount appropriated is ₱61,000.

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WAREHOUSE, ENGINEERS' ISLAND, MANILA.

The plans provided for the addition of a second story on the existing concrete walls of the warehouse, for the purpose of obtaining suitable offices for the bureau of navigation. The estimated cost was ₱40,000.

BAGGAGE-INSPECTION BUILDING, CUSTOM-HOUSE, MANILA.

This building is being constructed to facilitate the inspection of baggage of persons entering the port of Manila, and being adjacent to the Union Ticket and Information Company, occupying the old office of the captain of the port on the Pasig River, is conveniently situated for this purpose. The building contains a large room with ample entrances and exits, and is constructed of native hard wood. The contract price is ₱11,490.

CONSTABULARY BARRACKS AND QUARTERS, CEBU, CEBU.

The barracks will contain quarters for 50 men, with offices for the senior inspector, quartermaster, and supplies, to be constructed of reenforced concrete. The quarters for the officers are to be in detached cottages, to be constructed of native hard wood. The contract price is ₱41,100.

CONSTABULARY HEADQUARTERS, BAGUIO, BENGUET.

A building of heavy timber construction, to accommodate the constabulary school recently transferred from Manila to Baguio. During the season at Baguio this building will serve as the headquarters of the bureau of constabulary. This is being constructed by administration, at an estimated cost of ₱18,000.

CONSTABULARY BARRACKS, SANTO DOMINGO, LA LAGUNA.

This building was erected for the purpose of providing quarters for a company of constabulary in a section of La Laguna which is extremely productive, but subject to ladronism. The project consisted of adding a story of native hard wood on the stone walls of a military outpost of Spanish times. The contract price was ₱18,320.

BATHS, SIBUL SPRINGS, BULACAN.

This project consisted of reconstructing the existing bathing pools and of increasing their number from 2 to 12. The walls are of concrete, and are designed to carry a superstructure thereof. The spring itself has been surrounded by a concrete wall of semicircular form, and rendered secure from contamination. The appropriation for this project was ₱6,000.

A design for the superstructure of the pools and for a large pavilion to serve as a waiting place is in course of preparation.

SEWER PUMPING STATIONS, MANILA.

These buildings form the superstructure of large chambers inclosed with concrete walls, and containing electrically driven pumps for raising the sewage from the low to the high grades, according to the system necessary in cities of flat and low elevation such as Manila. There are six of these stations being constructed, the largest in Tondo. All but one of these stations occupy prominent positions at the corners of streets. While octagonal in form, in each case a slight projection on one of the faces was necessary for the operation of the sluice gates, and while this projection seemed to injure the architectural treatment, it was masked, as it were, behind a decorative motive bearing the emblems of the Philippine Islands, and containing a commemorative tablet. The structures are of reenforced concrete, and are covered with tile roofs. The cost of ₱23,100 for the superstructure alone is the estimated portion of the contract price for the entire work.

STOCK FARM, ALABANG, RIZAL.

This project consists of the construction of buildings and of the making of other improvements necessary for the operation of a station for the inoculation of cattle. The buildings include a serum laboratory, cattle sheds for bullocks, for a quarantine, and for goats, a dairy barn, and a cottage for the superintendent, the estimated cost of this project being ₱45,600.

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BUILDINGS FOR THE AGRICULTURAL STATION, TRINIDAD, BENGUET.

This group of buildings included a stable for horses, a cottage for the superintendent, and a greenhouse, all constructed of Benguet pine. The sum of ₱10,379 was appropriated for the work.

PROVINCIAL BUILDING, SANTA CRUZ, LA LAGUNA.

This building is built according to the same general floor plans as the buildings for the provinces of Pampanga, Tayabas, and Rizal. Sufficient funds were available, however, for construction of a colonnade entirely around the building. This not only adds to the appearance of the building, but also to its comfort by protecting the rooms from the heat of the sun, the glare of the light, and from severe storms. The columns extend through two stories and, like the building itself, are of reenforced concrete. This is the first attempt to reproduce the forms of Roman architecture in this material, and the result promises to be satisfactory.

On account of the soft subsoil, mostly of a light volcanic origin, special provision for the foundations was necessary. A comparison of the cost of driving piles with spreading out the footings sufficiently to produce a load of not over 1,000 pounds to a square foot resulted in favor of the latter method, and further investigation showed that a slab of reenforced concrete 30 centimeters thick and covering the entire area of the building would be the most economical and the safest form of foundation.

This building is the central feature of a large park which will contain the group of school buildings now in course of construction. The lowest bid for the general construction was ₱79,800, and the estimated cost of the building was ₱97,000.

PROVINCIAL BUILDING, LUCENA, TAYABAS.

This building is to contain the administrative offices of the provincial government and is similar as regards the general floor plans to the provincial buildings being constructed in the provinces of Pampanga, La Laguna, and Rizal. The construction, including the walls and floor system, is of reenforced concrete. A general plan for beautifying the surroundings of this building, including locations for future government buildings, was included in this project. The contract price was ₱84,600.

PRISON, CAPIZ, CAPIZ.

A building of one story, with walls of reenforced concrete, with accommodations for 60 prisoners, and containing guards' quarters, a small hospital, kitchen, and other dependencies. The estimated cost was ₱16,187.

MARKETS, MATADERO AND CATTLE SHED, MALABON, RIZAL.

During this year two market buildings have been constructed in the centers of population, at the two ends of the town. They measure 17.50 by 30 meters each, with widely projecting eaves, and are constructed with piers of reenforced concrete and roof trusses of hard wood. The floors are cement. In connection with one of these markets a matadero has been built, in the form of a detached building. Both of these markets face the main street and, being adjacent to the river, are accessible for transportation by water. The estimated cost was ₱19,650.

MAGALLANES MONUMENT, OPORTO, CEBU.

The plans provide for a thorough restoration of a well-designed monument, erected in 1868. The funds appropriated for the work amount to ₱1,850.

PRESIDENCIA, BATANGAS, BATANGAS.

A two-story building, constructed of reenforced concrete. The plans for the construction of the presidencia at San Pablo, La Laguna, were utilized with slight modifications. The estimated cost is ₱21,000.

PRESIDENCIA, SANTA BARBARA, ILOILO.

The plans provided for the thorough reconstruction of a large stone building of Spanish days. The building is of fine proportions and remarkably good design. The restoration of such monuments as this has been strongly recommended by this office. The estimated cost was ₱21,700.

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PRESIDENCIA, QUINGUA, BULACAN.

A two-story building, containing the municipal offices. The walls are to be of reenforced concrete, the balance of construction of native hard wood. The dimensions are 10.50 by 13.50 meters, and the estimated cost ₱13,000.

PRESIDENCIA, SAN PABLO, LA LAGUNA.

This building contains the offices of the municipality, in two stories, constructed of reenforced concrete. The contract price was approximately ₱21,000.

PRESIDENCIA, SAN FERNANDO, LA UNION.

Plans for this building provide for a two-story building of stone and native hard wood, at an estimated cost of ₱12,000.

TONDO SCHOOL, MANILA.

A two-story building, containing 12 class rooms and a large assembly hall, to be constructed of reenforced concrete. The site adjoins the Tondo church and includes a large playground. The extreme dimensions are 52.80 by 41.20 meters. The amount appropriated is ₱100,000.

TRADE SCHOOL, BATANGAS, BATANGAS.

To be constructed of native hard wood, the lowest bid being ₱14,198.

HIGH SCHOOL AND TRADE SCHOOL, CEBU, CEBU.

The high school is to contain 10 class rooms and an assembly hall, to be constructed of reenforced concrete and native hard wood. The trade schools is of timber construction. These buildings form a part of a group surrounding a a large playground. The lowest bid for the construction of the high school was ₱47,500, and for the trade school ₱17,500.

HIGH SCHOOL AND TRADE SCHOOL, CAVITE, CAVITE.

Two adjoining buildings constructed under the Spanish Government are to be remodeled. The construction is to be mostly of stone and brick masonry. The estimated cost of this work is ₱8,000.

HIGH SCHOOL, SANTA CRUZ, LA LAGUNA.

The plans submitted and accepted provide for a building of two stories, of reenforced concrete, containing 10 class rooms and an assembly hall. The construction of this building has been deferred until sufficient funds are secured. The estimated cost is ₱66,000.

TRADE AND POTTERY SCHOOL, SANTA CRUZ, LA LAGUNA.

This forms one of the group of buildings in course of construction on the provincial grounds. It is a one-story building of reenforced concrete, with detached wings for the pottery school and the blacksmithing. Prison labor is utilized in its construction. The estimated value is ₱15,000.

HIGH SCHOOL, TACLOBAN, LEYTE.

This building contains 6 class rooms and an assembly hall, in two stories, and is constructed of reenforced concrete and native hard wood. The contract price is ₱35,700.

TRADE SCHOOL, TACLOBAN, LEYTE.

This is a one-story building, with reenforced concrete walls and hard-wood trusses, and is to contain equipment for drafting, bench work, machine work, and blacksmithing. The contract price is ₱21,600.

AGRICULTURAL SCHOOL, BACOLOD, OCCIDENTAL NEGROS.

This building is to contain a class room, a large laboratory, and a storeroom, and is to be constructed with reenforced concrete walls, the balance of the construction being native hard wood. The lowest bid for the construction was ₱10,470.

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HIGH SCHOOL, LINGAYEN, PANGASINAN.

This is the largest of the school buildings yet designed, containing 12 class rooms and a large assembly hall, with the usual rooms for the principal and supplies. It is designed in two stories, with walls of reenforced concrete. The estimated cost is ₱120,000.

TRADE SCHOOL, LINGAYEN, PANGASINAN.

Like most of the trade schools now being constructed, this building will contain room for drafting, bench and machine work, and blacksmithing, in one story, with reenforced concrete walls. The amount appropriated is ₱20,000.

SCHOOL BUILDINGS, BAGUIO, BENGUET.

Academic building, trade school, dormitory, superintendent's cottage.—This group of buildings has been constructed during the year on a tract of land of 11 hectares reserved for educational purposes. This tract has a central location, and while the ground, being in a valley, is not especially valuable for residential sites, it is well drained, except a small portion to be used for agricultural instruction.

The buildings are substantially constructed of Benguet pine. They serve the double purpose of providing quarters for the regular school during the term, and for the headquarters of the annual teachers' assembly, held during the vacation. The aggregate cost is ₱24,000.

MUNICIPAL SCHOOL, LIBON, ALBAY.

Three-room schoolhouse, native hard wood, estimated to cost ₱7,300.

MUNICIPAL SCHOOL, SANTO TOMAS, BATANGAS.

A three-room schoolhouse constructed of local stone, at an estimated cost of ₱7,340.

MUNICIPAL SCHOOL, APARRI, CAGAYAN.

The plans furnished provided a building containing five class rooms and an assembly hall, to be constructed of native hard wood, except for the first story walls, which are to be reenforced concrete. The estimated cost is ₱25,000.

MUNICIPAL SCHOOL, BINALONAN, PANGASINAN.

The revised plans provide for a building 9.25 by 28.25 meters, containing five class rooms and an assembly room. The first-story walls are to be of local brick, the balance of the construction of native hard wood. The estimated cost is ₱25,000.

MUNICIPAL SCHOOL, PASAY, RIZAL.

The building will contain five class rooms in one story, constructed of native hard wood. The amount available is ₱12,000.

MUNICIPAL SCHOOL, CAMILING, TARLAC.

The plans provide for a two-story building, containing six class rooms and an assembly hall, constructed of native hard wood. Owing to lack of funds a small building will probably be erected here. The estimated cost according to the plans prepared is ₱25,000.

MUNICIPAL SCHOOL, PURA, TARLAC.

This building is to contain four class rooms and an assembly hall, in one story, and is to be constructed of native hard wood. The estimated cost is ₱20,000.

MUNICIPAL SCHOOL, PANIQUI, TARLAC.

This building is to contain four class rooms and an assembly room, in one story, and is to be constructed of native hard wood, at an estimated cost of ₱20,000.

PRIMARY SCHOOL, TAYABAS, TAYABAS.

This project consisted of remodeling a large public building of Spanish construction, the fund available being ₱10,000.

IMPROVEMENT OF PLAZA, ALBAY, ALBAY.

The plans provided for the restoration of the balustrades, walls, and the commemorative monument of this well-designed plaza, constructed about 1850.

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The construction of the provincial building and constabulary headquarters facing this plaza practically restores it to its original condition.[a]

B.

PROJECTS AND PLANS UNDER CONSIDERATION AND IN PREPARATION.

The following list includes projects for which perliminary plans or model plans are under consideration, and projects for which final plans are in course of preparation:

Subject.	Town.	Province.	Cost.
Medical school	Manila		₱250,000
Provincial building	Tarlac	Tarlac	62,000
Provincial building, reconstruction of	Nueva Caceres	Ambos Camarines	22,000
Market	Iloilo	Iloilo	9,000
Cattle shed	do	do	10,000
Presidencia	Tanauan	Batangas	6,000
Presidencia, reconstruction of	Santa Maria	Bulacan	6,100
Presidencia	Alaminos	Pangasinan	12,000
Do	Urdaneta	do	12,000
Do	Bauan	Batangas	12,000
Provincial school	Laoag	Ilocos Norte	30,000
Do	Cagayan	Misamis	31,620
High school	Nueva Caceres	Ambos Camarines	40,000
Do	Masbate	Sorsogon	17,000
Trade school	Lucena	Tayabas	20,000
Intermediate school shops	Atimonan	do	12,000
Trade school	Dumaguete	Oriental Negros	15,000
Do	Albay	Albay	25,000
Do	San Jose	Antique	15,000
Municipal school	Bulusan	Sorsogon	11,500
Do	Bayambang	Pangasinan	20,000
Do	San Miguel de Mayumo.	Bulacan	25,000
Do	San Pablo	La Laguna	25,000
Do	Pagsanjan	do	25,000
Do	Talisay	Cebu	20,000
Girls' dormitory	Tacloban	Leyte	30,000
Do	Iloilo	Iloilo	25,000
Domestic science building	Tagbilaran	Bohol	1,100
Municipal school	Nabua	Ambos Camarines	10,500
Do	Vigan	Ilocos Sur	12,000
Do	Angeles	Pampanga	14,000
Primary school	Alabat	Tayabas	10,500
Municipal school	Paniqui	Tarlac	10,600
Do	Caloocan	Rizal	17,600
Do	Malabon	do	14,500
Do	Asingan	Pangasinan	20,000
Do	San Nicolas	do	20,000
Intermediate school	Lubao	Pampanga	7,000
Do	Mambajao	Misamis	22,000
Municipal school	Baybay	Leyte	26,000
Constabulary barracks	Cotabato	Moro	7,273
Embarcadero	Manila		18,000
Fireproofing Oriente Building	do		10,400
Barrio schools, type plans: Model plans for schoolhouses of 1, 2, 3, and 4 rooms, constructed of various materials, appropriation, Act No. 1800, ₱250,000 available this year, plus 50 per cent from local sources			375,000
Total			1,384,693

C.

BUILDINGS IN COURSE OF PREPARATION.

The following buildings have been in course of construction during the fiscal year, based on plans prepared during the previous fiscal year, and described in last year's report. This office has assisted in the interpretation of the plans and specifications, and has furnished full-size detail drawings and other services in connection with the construction of these buildings.[b]

[a] A table showing the total of these projects to be ₱2,014,584 has been omitted and filed in the Bureau of Insular Affairs, War Department.

[b] This table, showing total cost of ₱598,113, has been omitted and filed in the Bureau of Insular Affairs, War Department.

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D.

PROJECTS FOR WHICH PLANS ARE IN PREPARATION.

The following is a list of projects for which preliminary plans are now in course of preparation:

Subject.	Town.	Province.	Cost.
Warehouses, reclaimed area	Manila		₱350,000
Custom-house	Cebu	Cebu	200,000
Prison	Lucena	Tayabas	20,000
Do	San Fernando	Pampanga	30,000
Total			600,000

E.

SUMMARY SHOWING COST, USE OF BUILDINGS, ETC.

The cost involved in the projects mentioned in the preceding lists is as follows:

	Projects.	Cost.
A. Completed plans	43	₱2,014,584
B. Plans in course of preparation, and preliminary plans	44	1,384,693
C. Projects under construction, from plans prepared during the last fiscal year	16	598,113
D. Preliminary plans being prepared	4	600,000
Total	107	4,597,390

The following table, compiled from the preceding lists, shows the purposes for which the buildings are intended, and the cost involved for each:

	Projects.	Cost.
Administration (provincial buildings, presidencias, offices, etc.)	19	₱693,227
Hospitals	3	941,000
Constabulary barracks	5	136,618
Warehouses	1	350,000
Custom-houses	2	211,490
Schools	62	2,005,824
Prisons	3	66,187
Miscellaneous	12	193,044
Total	107	4,597,390

These amounts do not include the cost of general public improvements, such as the development of the reclaimed area, the Luneta Extension, and improvements of parks in the city of Manila, the plans for which are prepared in this office.

In addition to those above mentioned, estimates were furnished of the cost of 29 various projects, 17 of which were in connection with the annual appropriation bill for permanent improvements. Model plans with estimates were submitted for 10 projects not included in the preceding lists.

Plans and specifications for 19 minor projects, prepared in other offices of the government, were approved, with changes when necessary.

The consulting architect acted in an advisory capacity in the rearrangement of the Marble Hall of the Ayuntamiento for the use of the Philippine Assembly, and in the decoration of Malacañan Palace, and prepared designs for several articles of furniture for the latter. The specifications and the contract for the Rizal monument were prepared in this office.

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F.

IMPROVEMENT OF THE CITY OF MANILA.

The plans developed for general improvements in the city of Manila include those for the street system for the commercial section of the reclaimed area, the laying out of the public gardens on the Luneta extension, the grading and draining of the moats surrounding the walled city, and preliminary plans for a system of parks and playgrounds.

The street system for the reclaimed area, which contains approximately 210 acres, has been laid out by the bureau of lands in accordance with plans prepared in this office and duly approved by the municipal board. It provides access for the railway to each pier, in order to properly connect the land and water transportation, and makes each of the 87 blocks, excepting 3, accessible to the railway. Separate and distinct rights of way are reserved for the railroad tracks, in order to eliminate this feature from the streets. The entire system has been based on what is believed will be required in the more or less distant future, rather than on the present needs, on the principle that the widening of streets along improved property is much more difficult and costly than the gradual improvement and maintenance of only as much of the street area as may be required. One of the streets leading from the Malecon directly to the water front has been constructed during the year.

The filling of the park area of the Luneta extension to the required grades with fresh soil was begun in January, and has been progressing rapidly and without interruption. This improvenrent has been under the direction of the department of sanitation and transportation, in accordance with plans prepared in this office. The material collected in cleaning the streets is being deposited on the park area at the rate of more than 300 cartloads every night, and covered with 8 inches of fresh soil taken from the glacis of the moat.

Inasmuch as the grading plans for the moat show a large surplus of material, the advantage of handling these two projects in connection with each other is apparent. Enough of the grading and turfing of the moat has been accomplished to convince the public that the treatment of the moats as a series of sunken panels of grassplots is both feasible and attractive.

The appointment by the governor-general of a committee of five for the purpose of developing a system of parks and playgrounds in the city of Manila resulted in the preparation of a preliminary plan and in the purchase on very favorable terms of a tract of 100,000 square meters in Malate. This tract, which adjoins that now used for the army corral along the beach and likewise reserved for a park, is traversed by a wide estero, and has the making of a beautiful public park. In the north section, four blocks of the San Lazaro estate have been reserved for a playground. The acquisition of a park in Tondo, where the need of one is most felt, has not yet been realized. A small tract at the junction of Aviles and San Rafael has been acquired during the year, and a plaza in the form of an equilateral triangle has been constructed from plans furnished by this office.

During the year studies for a general system of streets and boulevards, according to the principles indicated in the Burnham plans, have been progressing, with special reference to the location of the projected group of capitol buildings on Wallace Field, and of the proposed railroad terminal in Paco, this work being done in cooperation with the office of the city engineer.

Mention should be made of the projected boulevard along the Malate beach, for the construction of which ₱350,000 will be available, at the rate of ₱100,000 each year, beginning June 1, 1908.

G.

BAGUIO IMPROVEMENTS.

At Baguio the construction of a large number of buildings of a public and semipublic nature has contributed more than anything else, excepting the improved transportation, to its development. The buildings constructed during the year include the Benguet Sanitarium, the residence of the governor-general, a group of school buildings, a building for the headquarters of the constabulary, and a public market. The walks and drives planned and located during the preceding year have been graded, but not metalled, except for a small portion.

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H.

SIBUL SPRINGS RESERVATION.

A plan for the general improvement of the Sibul Springs reservation has been prepared. According to it the area of the plaza surrounding the springs is enlarged in order that the water may not be endangered from contamination. It provides for a system of streets radiating from the plaza, and while the irregular topographical conditions and the real-estate interests already established prevent the following of strictly symmetrical lines, the scheme will gain in picturesqueness what it loses in regularity. During the year a sufficient number of bathing pools of concrete have been constructed, and plans for a suitable superstructure and a pavilion for recreation are in course of preparation.

I.

EXPENSES AND GENERAL CONDITIONS.

During the year the following expenses were charged against this office:

Salary of the consulting architect	₱12,000.00	
Other salaries and wages	32,187.35	
		₱44,187.35
Office supplies		1,170.28
Transportation		2,020.56
Subsistence		86.30
Per diems		63.00
Cablegrams		23.92
Incidentals		82.87
Total		47,634.28

Although the general conditions affecting building construction have improved during the past 2 years, the difficulties with which the building contractors have to contend are still unusually severe. The chief difficulty is in the supply of materials. In the United States an architect's or contractor's office is besieged with material men, eager to supply any materials which may be required. Here the reverse is the true condition. Native timber is used as soon as it leaves the sawmills, and these have been taxed to their utmost. It frequently happens that it is impossible to obtain enough hardware of the same variety to furnish a comparatively small building, and delays in construction have been caused by lack of even cement. But the greatest difficulty in expediting the construction of reenforced concrete buildings has been the lack of carpenters for the form work. The number of Chinese carpenters in Manila is limited, and until the trade is further developed among Filipinos the expediting of large projects of this class must necessarily suffer. These questions will eventually be solved according to the law of supply and demand, but for the present construction is severely handicapped.

The policy of this office, in cooperation with the bureau of public works, has been to develop and encourage the contracting business, on the ground that while the government could organize its own construction force on a large scale, the general public are in need of competent builders as being indispensable to a civilized community. Since the first building of reenforced concrete in these islands was constructed, in 1905, eight different construction firms have received contracts for such construction and are now equipped to handle this class of work satisfactorily.

While all of these contractors are located in Manila, and are not easily induced to attempt work at any distance from headquarters, an effort is made to develop this business among Filipinos in the provinces.

Another thing which greatly hampers most of the contractors is the lack of capital necessary to handle large projects. For this reason this office has urged the retention of only 10 per cent of the value of the work performed, in making partial payments, instead of 20 per cent, as is now the practice, believing that with the present system of continuous inspection such a course could be pursued with safety.

The policy which has prevailed in this office since its organization, of using only durable materials in public buildings of a permanent character, has been strictly enforced during the past year. Where timber has been used for struc-

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tural purposes, it has been of the best kind, and as far removed from the dampness of the ground and from the danger of anay as possible. No imported woods of any kind have been specified, and soft woods have been used only in nonstructural parts of the construction.

While the problem of obtaining permanent materials for the construction of the walls and floors of buildings has been successfully met in the use of reenforced concrete, the use of such a temporary material as galvanized iron for roofing must unfortunately prevail until suitable roofing tile can be obtained at reasonable cost. Satisfactory tile are manufactured of clay in Europe and America, but the excessive cost, due to transportation and breakage, renders their general use in the Philippine Islands prohibitive. An effort to induce local firms to manufacture tile of approved form, of cement, has resulted in obtaining what is believed to be a satisfactory tile at reasonable cost.

Respectfully submitted.

W. E. PARSONS,
Consulting Architect.

The SECRETARY OF COMMERCE AND POLICE,
Manila, P. I.

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EXHIBIT H.

REPORT OF THE DIRECTOR OF POSTS.

OFFICE OF THE DIRECTOR OF POSTS,
Manila, P. I., August 10, 1908.

SIR: I have the honor to submit the annual report of the bureau of posts for the fiscal year ended June 30, 1908.

PERSONNEL.

The following shows the changes in the personnel which occurred during the year:

	Americans.	Filipinos.	Total.
Reinstated	10		10
Transferred from other bureaus	5	2	7
Appointed:			
Classified service	6	39	45
Unclassified service	113	685	798
Temporary and substitute appointments	8	12	20
Transferred to other bureaus	3		3
Resigned:			
Classified service	17	9	26
Unclassified service	43	313	356
Removals:			
Classified service	5	5	10
Unclassified service	29	152	181
Deaths	1	9	10
Temporary and substitute discontinued	12	9	21

The following statement shows the number of persons employed in the bureau at the close of the year, together with positions held and the nationality of each:

Office or position.	Americans.		Filipinos.		Total.
	Classified service.	Unclassified.	Classified service.	Unclassified.	
Office director of posts	28	2	19	21	70
District inspectors	14				14
Postmasters	16	41	3	479	539
Post-office clerks and employees	36	7	72	130	245
Letter carriers:					
Manila			20		20
Provincial				35	35
Operators		36		102	138
Linemen	3	52		232	287
Railway post-office and steamboat postal clerks	1		8		9
Teamsters and drivers	1			7	8
Mail carriers and contractors		7		252	259
Total	99	145	122	1,258	1,624

The director of posts acts as postmaster ex officio at Manila; consequently but 539 postmasters are shown on the above list, although 540 post-offices are in operation.

During the year the personnel was increased 20 per cent, owing principally to the taking over of 31 telegraph offices and the connecting telegraph and cable lines operated by the Signal Corps, United States Army, and making a material increase in the force of operators and linemen, and the employment of a number of Filipino youths as student-operators.

The work of transferring the post-offices in the smaller municipalities to the municipal treasurers is progressing favorably. Of the 391 offices which might be

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placed in charge of municipal treasurers, 249 changes in this direction have been made. The remaining 142 offices are held by persons who have filled the position satisfactorily for a number of years. As they resign or become separated from the service the offices will be transferred to the municipal treasurers.

During the year the percentage of Filipinos employed was increased 2 per cent, thus leaving a ratio of personnel on June 30, 1908, 15 per cent Americans to 85 per cent Filipinos.

REVENUES.

The following statement shows the gross revenues in comparison with those for the fiscal years 1906 and 1907:

Item.	1906.	1907.	1908.
Stamp sales	₱425,261.50	₱607,203.44	₱677,290.98
Second-class postage	6,293.32	7,661.84	8,509.72
Miscellaneous	232.25	1,764.98	7,647.37
Box rents	16,651.52	17,182.39	18,195.28
Money-order fees transferred to postal funds	35,790.18	37,774.16	[b] 43,258.40
Total	[a] 484,228.77	671,586.81	754,901.75

[a] This does not include the receipts of Signal Corps, ₱61,425.97.
[b] There should be deducted from this amount, on account of lost postal funds, ₱35.16.

The increased percentages in receipts over the preceding year are itemized as follows:

	Per cent.
Stamp sales	11.5
Second-class postage	11
Miscellaneous	333.3
Box rents	5.9
Money-order fees	14.5

The total increase in the gross amounts to 12.5 per cent. Collections on account of automobile service between Camp 1 and Baguio reached ₱6,084, included under heading of "Miscellaneous receipts," fiscal year 1908.

The tolls collected on telegrams by means of postage stamps affixed amounted to ₱269,742.02, included in the above statement under the item of "Stamp sales."

The revenues of the Manila post-office were ₱332,988.91, or 44.1 per cent of the whole.

A fair comparison can now be made between the yearly revenues, as during the fiscal year 1907 all divisions of the bureau pertaining to the above revenues were in operation.

EXPENSES.

The following is a comparative statement of the expenses for the fiscal years 1907 and 1908:

Item.	1907.	1908.	Total for 1908.
Salaries and wages (excepting railway and steamboat postal clerks, mail drivers, teamsters, contractors, and carriers and linemen)	₱628,422.88	₱755,295.55	
Outstanding July 16, 1908		847.39	₱756,142.94
Mail transportation (including railway and steamboat postal clerks, mail drivers, teamsters, contractors, and carriers' salaries)	138,817.55	123,738.46	
Outstanding July 16, 1908		68,867.17	192,605.63
Construction, maintenance, and repair of telegraph and telephone lines (including linemen's salaries and transportation)	[a] 165,261.33	216,380.04	
Outstanding July 16, 1908		4,850.80	221,230.84
Contingent expenses	102,721.37	117,977.45	
Outstanding July 16, 1908		10,185.18	128,162.63
Total	1,035,223.13		1,298,142.04

[a] During the fiscal year 1907 the Signal Corps expended ₱65,071.12, which is not included in this item.

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There was paid during the fiscal year 1908, on account of prior fiscal years, ₱26,287.17, which is not included in the above statement.

The increase in the gross expense amounts to 25.4 per cent, divided as follows:

	Per cent.
Salaries and wages	20.3
Mail transportation	38.8
Construction, maintenance, and repair of telegraph and telephone lines	33.8
Contingent expenses	24.8

The increase in the items "Salaries and wages," "Construction, maintenance, and repair of telegraph and telephone lines," and a part of "Contingent expenses" is accounted for by the taking over of the additional telegraph and cable lines formerly operated by the Signal Corps, United States Army, and the fact that the postal savings bank division was in operation but nine months of the last fiscal year. There is also included under "Contingent expenses" the purchase of two automobiles. The increase under the heading "Mail transportation" was caused by the readjustment of sea transportation and transportation of mails through foreign countries under the provisions of the Universal Postal Convention signed at Rome May 26, 1906.

The approximate cost of each division of the bureau of posts was as follows:

	Fiscal year 1907.	Fiscal year 1908.	Percentage of increase.
Approximate cost of—			
Postal division	₱565,946.08	₱668,065.23	18 +
Money-order division	37,641.21	38,944.26	3.5
Telegraph and telephone division	394,242.49	547,851.74	38.9
Postal savings bank division	37,393.35	43,280.81	15.7+
Total	1,035,223.13	1,298,142.04	25.4

POSTAL DIVISION.

New designs of postal cards, stamped envelopes, and newspaper wrappers were received as follows:[a]

The old stock of stamped envelopes was recalled from post-offices and will be destroyed by the committee appointed under Executive Order No. 51, series of 1908. The value of the old and damaged stock on hand June 30, 1908, was ₱3,137.61.

The following is a complete list of the stamped stock of the bureau:

No.		Size.	Denomination.	Color of stamp.	Design.	Selling price each.
		Inches.				
5	Envelopes	3½ by 6 1/16	₱0.02	Green	Profile of Rizal	₱0.02½
5	....do	3½ by 6 1/16	.04	Red	Profile of McKinley	.04½
8	....do	4½ by 9½	.04	...do	...do	.04½
12	Wrappers	8 by 12	.02	Green	Profile of Rizal	.02½
	Postal cards	3½ by 5½	.02	Black	Portrait of Rizal	.02
	.....do	3½ by 5½	.04	...do	Portrait of McKinley	.04

[a] This table has been omitted and is on file in the Bureau of Insular Affairs, War Department.

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Stamps.

Denomination.	Design.	Color.
2 centavos	Portrait of Rizal	Green.
4 centavos	Portrait of McKinley	Red.
6 centavos	Portrait of Magellan	Purple.
8 centavos	Portrait of Legaspi	Dark brown.
10 centavos	Portrait of Lawton	Blue.
12 centavos	Portrait of Lincoln	Magenta.
16 centavos	Portrait of Sampson	Dark lilac.
20 centavos	Portrait of Washington	Light brown.
26 centavos	Portrait of Carriedo	Slate.
30 centavos	Portrait of Franklin	Olive.
1 peso	Coat of arms	Orange.
2 pesos	....do	Black.
4 pesos	....do	Sapphire blue.
10 pesos	....do	Dark green.
20 centavos (special delivery)	Mount Mayon and Filipino messenger	Light blue.

Stamp books containing 24 two-centavo stamps, price, per book ..... ₱0.50
Stamp books containing 12 four-centavo stamps, price, per book ..... .50

By arrangement with the United States Bureau of Engraving and Printing a surplus of stamps is kept in stock at Washington, D. C., which will prevent any delay in filling our orders promptly.

On July 1, 1907, 505 post-offices were in operation. During the year 35 new offices were established, 3 reestablished, and 3 discontinued, leaving 540 post-offices in operation on June 30, 1908, as follows:

Province.	Number of municipalities.	Number of post-offices in municipalities.	Number of post-offices in barrios.	Total number of post-offices.
Agusan	3	2	1	3
Albay	21	13	2	15
Ambos Camarines	35	27	1	28
Antique	11	7	.....	7
Bataan	8	6	.....	6
Batangas	17	17	.....	17
Benguet	16	1	1	2
Bohol	33	17	.....	17
Bulacan	15	13	.....	13
Cagayan	22	14	1	15
Capiz	28	15	.....	15
Cavite	13	13	.....	13
Cebu	41	34	.....	34
Ilocos Norte	10	10	1	11
Ilocos Sur	20	12	1	13
Iloilo	18	16	1	17
Isabela	10	7	.....	7
La Laguna	23	17	1	18
La Union	12	12	.....	12
Lepanto-Bontoc	22	4	1	5
Leyte	34	25	.....	25
Manila	1	1	.....	1
Mindoro	9	2	.....	2
Misamis	11	11	.....	11
Moro	15	11	4	15
Negros Occidental	22	21	1	22
Negros Oriental	14	14	1	15
Nueva Ecija	21	13	.....	13
Nueva Vizcaya	6	5	.....	5
Palawan	6	4	1	5
Pampanga	18	17	2	19
Pangasinan	41	41	.....	41
Rizal	20	16	1	17
Samar	32	17	.....	17
Sorsogon	29	21	.....	21
Surigao	9	4	.....	4
Tarlac	11	10	.....	10
Tayabas	26	21	.....	21
Zambales	11	8	.....	8
Total	714	519	21	540

On account of the lack of funds it has been impossible to establish a post-office, as contemplated, in each municipality in the regularly-organized provinces. Applications now on file must be treated in accordance with the importance of the municipality rather than by preference as to time of filing.

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Free-delivery municipal letter-carrier service was established in 31 municipalities, as follows:

Province.	Number of municipalities.	Names of municipalities.
Cavite	12	Alfonso, Bacoor, Carmona, Cavite, Imus, Indang, Naic, San Francisco, Silang, Novaleta, Maragondon, Kawit.
Negros Oriental	9	Bacon, Dauin, Siaton, Dumaguete, Luzuriaga, Tayasan, Tanjay, Guiljugan, Aquitan.
Pangasinan	3	Alava, Mangaldan, San Fabian.
Ilocos Sur	3	La Paz, Dolores, Bucay.
Bulacan	1	Santa Maria.
Ambos Camarines	1	Nueva Caceres.
Cebu	1	Cebu.
Iloilo	1	Iloilo.
Total	31	

The extension of this service will likewise have to be discontinued until such time as sufficient funds are available for the purpose. It is to be regretted that the Philippine Legislature failed to appropriate the amount necessary to carry on this free-delivery service, as Filipinos and others, except Americans, have never been accustomed to apply personally at the post-office for their correspondence. To abandon the work will result in a large quantity of mail addressed to persons residing in municipalities and barrios to remain undelivered.

For the free-delivery service in Manila 20 carriers are now employed. These carriers delivered 1,331,878 pieces, an increase of 5 per cent over last year, and collected from street letter boxes 1,263,895 pieces, an increase of 3.8 per cent over the previous year.

There were advertised 30,139 pieces of mail matter, of which 4,484 were delivered and 25,655 sent to the dead-letter office. The increase in the number of pieces delivered amounted to 4 per cent over last year, and 16 per cent in the number of pieces sent to the dead-letter office.

On July 1, 1907, 58 publications printed in the Philippine Islands were listed as second-class mail matter, and 3 newsdealers enjoyed the second-class privilege. During the year 28 publications were entered as second-class mail matter, and 25 discontinued, leaving at the end of the year 3 registered newsdealers and 61 second-class publications, as follows:

Newsdealers.—American Book and News Company, Manila; Book Exchange (La Motte), Manila; John R. Edgar & Co., Manila.

Newspapers and periodicals.

MANILA.

Name.	Language.	Frequency of issue.
El Comercio	Spanish	Daily.
El Libertas	do	Do.
El Mercantil	do	Do.
El Renacimiento	do	Do.
Excelsior	English and Spanish	Semimonthly.
Far Eastern Review	English	Monthly.
Cablenews-American	do	Daily.
Encyclopædia Filipina	Spanish	Monthly.
Panahon	Tagalog	Daily.
Ang Daan ng Kapayapaan	do	Monthly.
La Democracia	Spanish	Daily.
Keng Tok Seng Vun	Chinese	Do.
La Estrella de Antipolo	Spanish	Weekly.
Philippine Agricultural Review	English	Monthly.
Chispazos	Spanish	Weekly.
V. A. P. Sentinel	English	Do.
Filipina Esperantisto	Spanish	Monthly.
The Colonial Monthly	English	Do.
El Mercurio	Spanish	Daily.
Lunas ng Bayan	Tagalog	Weekly.
Yek Yat Sun Po	Chinese	Daily.
Official Gazette	English and Spanish	Weekly.
Philippine Christian Advocate	English	Semimonthly.
Asamblea Filipina	Spanish	Daily.

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Newspapers and periodicals—Continued.

Name.	Language.	Frequency of issue.
Ang Liuayway	Tagalog	Weekly.
The Daily Bulletin	English	Daily.
Ang Bagong Araw	Tagalog	Monthly.
La Jurisprudencia	Spanish	Semimonthly.
The Manila Times	English	Daily.
The Philippines Gossip	do	Weekly.
Philippine Education	do	Monthly.
Philippine Journal of Science	do	Do.
Vida Filipina	Spanish	Daily.
The Monthly Sermon and Reporter	English	Monthly.

OTHER THAN MANILA.

Name.	Location.	Language.	Frequency of issue.
Ang Camatuoran	Cebu	Visayan	Weekly.
Ang Suya	do	do	Triweekly.
Precursor	do	do	Daily.
Cebu Courier	do	English	Weekly.
Kauswagan	do	Visayan	Semiweekly.
El Tiempo	Iloilo	Spanish	Daily.
El Adalid	do	Visayan	Do.
Kadapig Sg Banwa	do	do	Do.
Filipino Students Companion.	do	English	Quarterly.
Nuevo Heraldo	do	Spanish	Daily.
Pearl of the Orient	do	English	Quarterly.
Ang Manugbantala	do	Visayan	Monthly.
Silliman Truth	Dumaguete	English	Semimonthly.
La Paz	Nueva Caceres	English and Spanish	Do.
El Noticiero	Tuguegarao	Spanish	Weekly.
La Voz de Mindanao	Zamboanga	English	Semiweekly.
Mindanao Herald	do	English and Spanish	Weekly.
El Imparcial	San Fernando, Pampanga	Pampangan and Spanish	Triweekly.
Ang Katarungan	Cagayan, Misamis	Visayan	Weekly.
La Nueva Era	Vigan	Spanish	Do.
El Mesejero Catolico	do	Ilocano	Semimonthly.
Dalan ti Cappia	do	do	Weekly.
La Juventud Ilocana	do	Ilocano and Spanish	Semimonthly.
Philippine Christian	do	English	Monthly.
Dagulti Naimbag a Damag.	San Fernando, Union	Ilocano	Weekly.
Plaridel	Malolos	Tagalog and Spanish	Semimonthly.
El Heraldo Bicol	Legaspi	Bicol and Spanish	Semiweekly.

The following is a list of offices at which mail matter has been entered as second class, and a comparative statement of the amount of second-class postage collected during the fiscal years 1907 and 1908, showing an increase in collections of 11 per cent:

Name of office.	1907.	1908.
Legaspi, Albay	₱10.28	₱36.46
Nueva Caceres, Ambos Camarines	10.88	11.40
Baguio, Benguet	.....	16.98
Malolos, Bulacan	22.20	64.32
Tuguegarao, Cagayan	13.28	5.04
Cavite, Cavite	1.44	.....
Cebu, Cebu	150.82	228.46
Vigan, Ilocos Sur	83.42	85.24
Iloilo, Iloilo	358.28	440.26
San Fernando, La Union	11.06	9.58
Tacloban, Leyte	26.62	20.40
Manila	6,761.50	7,418.40
Cagayan, Misamis	8.38	7.40
Parang, Moro	4.14	.....
Zamboanga, Moro	13.26	33.16
Bacolod, Negros Occidental	90.42	13.98
Dumaguete, Negros Oriental	6.14	5.72
Bacolor, Pampanga	50.64	.....
San Fernando, Pampanga	4.12	110.96
Fort Wm. McKinley, Rizal	34.96	1.96
Total	7,661.84	8,509.72

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Box rents collected show an increase of 5.9 per cent over those of the fiscal year 1907, as follows:

Office.	1907.	1908.
Legaspi, Albay	₱529.32	₱536.67
Tabaco, Albay	315.00	254.00
Tuguegarao, Cagayan	75.84	65.80
Cebu, Cebu	1,594.58	1,726.74
Laoag, Ilocos Norte	90.60	87.40
Iloilo, Iloilo	1,977.35	1,922.70
San Fernando, Union	181.00	197.00
Manila	12,164.70	12,564.15
Sorsogon, Sorsogon	254.00	246.00
Zamboanga, Moro	.....	[a] 594.82
Total	17,182.39	18,195.28

[a] Three-quarters only.

The business transacted by the registry division shows a healthy increase over the previous year, as shown by the following:

	1907.	1908.	Per cent increase.
Total number pieces mail registered at Philippine offices	280,044	331,102	18
Number pieces received from United States	38,585	46,006	19
Number pieces received from foreign countries	54,536	62,015	13
Number pieces sent to United States	46,328	47,149	2
Number pieces sent to foreign countries	36,588	43,935	20
Number pieces sent from one Philippine office to another Philippine office	197,128	255,249	29
Number of pieces handled by Manila post-office	331,365	373,952	12

This large increase is a very encouraging sign to the commercial interests of the islands. It is believed that the regular schedules maintained over 21 interisland routes are responsible in a measure for this patronage. The contract steamers now cover 13 routes, and are supplemented by 8 bureau of navigation routes, enabling the mail service to cover at regular and frequent intervals practically every port of importance in the Philippine Islands. One route initiated by the bureau of navigation has been taken over by a commercial company without subsidy.

Railroad construction under concession granted by Act No. 1510 has been progressing, and the following shows the railway mail service on Luzon during the year:

Number of routes in operation July 1, 1907	5
Length of routes.....kilometers	330.4
Number of routes established during fiscal year	4
Length of routes.....kilometers	77.1
Number of routes in operation June 30, 1908	9
Length of routes.....kilometers	407.5
Average number of trips per week	8.5
Number of kilometers mail carried	406,044
Cost for fiscal year	₱18,844.00
Rate of cost per kilometer traveled	₱0.046
Rate of cost per kilometer of length per annum	₱53.00
Increase in number of routes during fiscal year.....per cent	80
Increase in number of kilometers of length.....per cent	23

The rate of pay for carrying mail during the fiscal year was fixed at ₱53 per kilometer, equal to that paid by the postal department of the United States for like service. The cost of this service increased ₱11,221 over the last fiscal year. This is explained by the fact that free service was given during prior years, and until April 24, 1907, over the Manila and Dagupan line. An agreement under the provisions of Act No. 1510 is now under consideration by the manager of the Manila Railroad Company and this office. It is hoped that an adjustment will be reached whereby all the conditions under which mail shall be carried and handled will be clearly and definitely settled. Railways built under franchise granted by Act No. 1497 are not as yet prepared to carry the mail.

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The following is a summary statement of the inland transportation of mails between post-offices for the year:

Number of contract routes between post-offices	21
Number of kilometers mails carried thereon	286,972.6
Cost for year	₱27,584.81
Average cost per kilometer carried	₱0.096
Number of noncontract routes between post-offices	224
Number of kilometers mails carried thereon	938,030.6
Cost for year	₱36,218.12
Average cost per kilometer carried	₱0.038
Total number of routes between post-offices	245
Total number of kilometers mails carried	1,225,003.2
Cost for year	₱63,802.93
Average cost per kilometer carried	₱0.052
Number of gratuitous routes between post-offices	6
Number of kilometers mails carried thereon	9,170
Number of contract routes at close of year	20
Length of same....kilometers..	1,512
Number of noncontract routes at close of year	203
Length of same....kilometers..	5,051.6
Number of gratuitous routes at close of year	6
Length of same....kilometers..	71.6
Total number of routes at close of year	229
Length of same....kilometers..	6,635.2
Number of routes on which mails were carried during year between post-offices and mail trains or mail steamers	54
Cost at Manila, including mail launch	₱20,028.11
Cost at other offices	₱5,445.74
Total cost	₱25,473.85
Number of routes in operation June 30, 1908	46

The additional cost of the service at Manila over last year, about ₱1,100, was occasioned by increase of fodder ₱673, horseshoeing ₱104, and salaries of foreman and drivers ₱379.

During the year the Manila post-office dispatched 21,076 mails, consisting of 23,871 locked pouches and 25,496 bags of paper mail, to provincial post-offices. This shows an increase of 2,834 mails, 3,212 pouches, and 1,038 bags. The Manila post-office received from provincial post-offices 18,066 mails, consisting of 19,477 locked pouches and 5,357 bags of paper mail, an increase of 3,086 mails, 3,359 pouches, and a decrease of 420 bags. The decrease in the number of sacks of paper mail received from provincial post-offices resulted from more frequent opportunity to dispatch mails, enabling postmasters to include all classes of mail in locked pouches.

Postal clerks on cutters maintained by the bureau of navigation distributed 2,261 packages of letters and 222 sacks of paper mail, a decrease of 977 and 153, respectively, due to the withdrawal of two bureau of navigation cutters. These clerks handled 4,984 registered packages and 228 registered sacks. They traveled 73,590.5 kilometers.

Postal clerks on railroad trains between Manila and Dagupan distributed 53,634 packages of letters and 4,763 sacks of paper mail, an increase of 6 per cent in the first and 0.02 per cent in the second instance. These clerks handled 34,120 registered packages and 2,052 registered sacks, an increase of 33.7 per cent in the former and of 4.5 per cent in the latter. They traveled 148,044.5 kilometers, and their helpers 1,877 kilometers. This service is performed entirely by Filipino clerks. A favorable showing has been made in reducing the number of errors committed last year by 49.5 per cent.

The following is a concise statement of mail received from and dispatched to the United States:

Number of mails dispatched from the United States	105
Number of pouches of letters dispatched from the United States	689
Number of pouches of registers dispatched from the United States	2,563
Number of sacks of papers dispatched from the United States	12,551
Number of mails sent to the United States	76
Number of pouches of letters sent to the United States	649
Number of pouches of registers sent to the United States	954
Number of sacks of papers sent to the United States	2,503

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There were a sufficient number of consolidations in dispatches of mails from the United States to reduce the number of arrivals here to 85, and of consolidations in mails dispatched to the United States to reduce the number of different arrivals at United States ports to 62. There were sent to United States ships and troops stationed in foreign ports 605 bags of mail, and 89 were received from such sources.

The following statement shows the exchange of mails with foreign countries:

Number of mails received from foreign countries	467
Number of bags received from foreign countries	6,010
Number of mails sent to foreign countries	429
Number of bags sent to foreign countries	3,072

Net weight of letters sent to foreign countries, 6,755,357 grams, an increase of 759,532 grams, or 12.7 per cent.

Net weight of prints sent to foreign countries, 17,956,602 grams, an increase of 1,733,115 grams, or 10.7 per cent.

This weight does not include mail matter addressed to the United States and dispatched via Hongkong or Japanese ports.

The payments to commercial vessels for carrying our mails to foreign ports amounted to ₱13,268.74, and to foreign countries for territorial and sea transportation ₱62,232.14, increasing the cost over last year by ₱35,265, or over 111 per cent. This increase is attributable to the result of the weighing of mails during the first twenty-eight days of last November, under the provisions of the Universal Postal Convention, signed at Rome, May 26, 1906, and which became effective January 1, 1908, to remain in force until December 31, 1913. Heretofore yearly settlements for this service have been made on data obtained from the weighing of the mails held in 1899. At that time almost all of our mail matter addressed to the United States was dispatched direct on United States Army transports. The yearly payment made to Hongkong, based on the 1899 data, was about ₱7,103. Under the new order over ₱90,000 will probably be necessary, unless a lower rate can be obtained from the different steamship lines now plying between Hongkong, Japan, and the Pacific coast on a regular schedule.

AUTOMOBILE SERVICE, CAMP 1 TO BAGUIO, BENGUET.

Two Stanley automobiles were ordered by cable from the United States to furnish mail and passenger transportation between Camp 1 and Baguio during the period the Philippine Commission transacted business at the latter place. The machines arrived on April 4, 1908, per the United States Army transport *Thomas*, were placed in operation April 12, 1908, and discontinued May 27, 1908. The cost of the machines and all operating expenses amounted to ₱15,018.64. The revenues obtained from fares amounted to ₱6,084, and in addition ₱675 were saved in mail transportation. A very handsome return on the investment has been shown. As these machines are not especially adapted for large passenger service, they were, under your authority, turned over to the bureau of public works for use in road inspection, at a discount of 20 per cent from the original cost, not including express charges from Boston to San Francisco.

It has been demonstrated that this service can be made a paying investment, in addition to bringing this health resort within easy reach of Manila. Five Stanley automobiles, "mountain wagons," capable of carrying 7 passengers each, have been ordered and will be put on this run at the opening of the season, next November.

DEAD-LETTER OFFICE.

The following statements show the work of the dead-letter office for the year:

Source from which received.	Registered articles.	Ordinary letters.	Ordinary packages.	Total.
On hand undisposed of July 1, 1907:				
United States	404	6,277	346	7,027
Foreign countries	85	1,599	185	1,869
Manila post-office	1,051	43,326	1,099	45,476
Other Philippine sources	37	394	9	440
Returned after attempt to find sender	.....	2,158	5	2,163
Total to be accounted for	1,577	53,754	1,644	56,975

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Disposition made.	Registered articles.	Ordinary letters.	Ordinary packages.	Total.
Returned to United States	210	8,926	259	9,395
Returned to foreign countries	600	2,261	161	3,022
Request matter, returned to senders in the Philippines	576	2,600	226	3,402
Opened and returned to senders	.....	22,158	21	22,179
Containing money, drafts, stamps, etc., returned to senders	.....	127	1	128
Containing other valuable matter	.....	15	120	135
Destroyed	9	17,608	687	18,304
Filed, containing money, drafts, stamps, etc	.....	36	2	38
Filed, containing other valuables	182	23	167	372
Total to be accounted for	1,577	53,754	1,644	56,975

At the close of the year there were on file in the dead-letter office 204 registered letters and packages, 28 ordinary letters containing money, drafts, or stamps, and 556 letters or packages containing other valuables. During the year money to the amount of ₱55.73 was taken from letters which had been on file more than one year and turned into postal revenues as "Miscellaneous receipts." Our present laws do not authorize me to dispose of unclaimed articles of value remaining on hand in the dead-letter office.

MONEY-ORDER DIVISION.

The following is a comparative statement of money-order business for the fiscal year with that of the fiscal year 1907:

	1907.	1908.
Number of orders issued	98,813	107,751
Amount of orders issued	$3,229,446.09	$3,645,123.13
Fees collected	$19,658.59	$21,629.20
Number of orders paid and repaid	58,601	65,518
Amount of orders paid	$2,211,988.95	$2,518,547.90
Average amount of each order issued	$32.69	$33.83
Average amount of each order paid	$39.45	$38.44
Deposits of money-order funds received at Manila from provincial offices	$1,787,648.55	$2,087,105.23
Amount of money-order funds sent to provincial offices to pay orders	$37,915.16	$14,045.50
Amount of invalid orders deposited in insular treasury	$1,255.96	$240.65
Amount of Philippine orders paid in the United States	$1,262,209.02	$1,298,566.71
Amount of United States orders paid in the Philippine Islands	$178,542.03	$185,066.16

The increase in the number of orders issued was over 9 per cent, while in the total money value it was almost 13 per cent. This is significant owing to the fact that during the fiscal year 1907 a decrease of 12 per cent was noted in the value of money orders issued as compared with the fiscal year 1906.

Money-order business was inaugurated in the post-offices at Atimonan, Tayabas; Borongan, Samar; Mambajao, Misamis; Misamis, Misamis; and Oroquieta, Misamis. This service is now in operation at all provincial capitals except Pasig, Rizal, and Butuan, Agusan. The establishment of the money-order business at the Butuan and other offices throughout the islands is now under way.

TELEGRAPH DIVISION.

The following is a summary of the telegraph business, including military offices:

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Table showing number and value of messages sent and percentage of increase or decrease.

	From military offices.				From bureau of posts offices.				Total.			
	Number.	Decrease.	Value.	Decrease.	Number.	Increase.	Value.	Increase.	Number.	Increase.	Value.	Increase.
		Per cent.		*Per cent.*		*Per cent.*		*Per cent.*		*Per cent.*		*Per cent.*
Insular government business	5,627	81.4	₱4,161.96	78.0	84,694	122.2	₱59,438.12	108.2	90,321	81.9	₱63,600.10	17.2
Provincial government business	1,467	79.7	1,949.76	80.3	16,326	81.1	18,970.74	78.4	17,793	8.9	20,920.50	1.9
Municipal government business	322	74.0	341.16	76.3	4,240	68.6	4,533.72	77.0	4,562	20.8	4,874.88	22.1
Commercial and half-rate business	17,553	78.6	14,269.06	77.2	206,811	74.7	160,071.48	74.1	224,364	11.4	180,340.54	14.2
Total telegraph revenue	.....	.....	20,721.96	77.7	.....	.....	249,020.00	73.1	.....	.....	269,742.02	13.9
War Department, official business	40,166	59.7	80,817.36	60.3	39,937	370.7	84,481.30	408.6	44,103	a 89.2	165,298.66	a 24.8
Navy Department, official business	382	84.0	593.36	80.9	7,499	48.1	9,350.70	31.9	7,881	5.9	9,944.06	a 2.5
Other United States Government departments, official business	123	64.8	120.32	67.2	1,401	407.6	2,081.08	1,151.4	1,524	143.4	2,201.40	812.6
Bureau of posts business	1,764	.....	1,949.12	.....	45,686	.....	45,988.84	.....	47,450	.....	47,937.96	.....
Total of free business	.....	.....	83,480.16	59.7	.....	.....	141,901.92	841.8	.....	.....	225,382.08	a 1.7
Total value of all messages sent	67,404	69.8	104,202.12	65.3	400,594	123.5	390,921.98	135.5	473,998	10.9	496,124.10	0.8

a Decrease.

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The decrease in business at military offices is due to the transfer of cables and other military lines to the bureau of posts, the dead-head and wire reports pertaining to the telegraph division now being shown under the heading of "Bureau of posts business."

The following is a summary of the transfer of wires and offices during the fiscal year:

Number of kilometers insular telegraph line June 30, 1908	4,898
Length in kilometers insular cables June 30, 1908	2,176
Number of kilometers military telegraph wires transferred to insular government	1,468.8
Number of kilometers military cables transferred to insular government	1,920.52
Number of kilometers insular telegraph wires converted into telephone	64
Number of kilometers insular telephone wires converted into telegraph	16
Number of kilometers insular telegraph lines reconstructed	274.4
Number of kilometers insular telegraph lines abandoned and serviceable material recovered	
Number of insular telegraph offices closed	5
Number of insular telegraph offices opened	10
Number of military telegraph offices transferred to insular government	31
Number of insular telegraph offices	135
Number of military telegraph offices	19
Number of telephones in service	417
Number of kilometers insular telephone lines	3,468.8
Number of kilometers insular telephone lines constructed	26.4
Number of kilometers insular telephone lines reconstructed	140

In accordance with a resolution of the Philippine Commission adopted March 20, 1907, and effective October 4, 1907, 31 telegraph offices and the corresponding lines and cables were transferred to the bureau of posts. This completes the transaction with the exception of the storage-battery plant, which is still operated by the United States Signal Corps at Cuartel Infanteria, Manila.

The circuits of cables as now laid are shown in the following table:

Circuit No.	Between.	Kilometers.	Circuit No.	Between.	Kilometers.
5	Naic and Corregidor and Corregidor and Malrveles	32.2	31	Ormoc-Cebu	135.2
14	Batangas-Calapan	49.9	32	Masin-Surigao	74.7
	Calapan to Boac to Romblon	194.8	33	Argao-Loon	24.1
	Romblon to Masbate	190	18	Oslob-Dumaguete	29.0
13	Guinayangan-Pasacao	82.1		Dumaguete-Camp Overton; Dumaguete-Boundary	200.7
	Legaspi-Bacon	44.5		Camp Keithley-Camp Vicars	27.4
	Sorsogon-Masbate	86.9	39	Iligan-Cagayan	96.6
27	Molinao-Cololbong	49.9	40	Iligan-Misamis	49.9
15	Milagros to Capiz	117.5	20	Malabang-Zamboanga	227.0
24	Iloilo-Camp Jossman	3.2	22	Malabang-Parang	48.3
25	San Jose-Cuyo	133.6			
16	Masbate-Calbayog	148.1		Total	2,176.0
	Calbayog-Catbalogan, Catbalogan-Carigara	130.4			

On January 9, 1908, and shortly after the transfer of the cables, circuit No. 20, between Malabang and Zamboanga, became interrupted. The cable ship endeavored to restore communication, but found that at least 40 miles of deep-sea cable would be necessary. Less than 20 miles were on hand, and in consequence the repairs had to be abandoned. I understand that this grade of cable costs at least ₱1,000 per mile in the United States. This bureau has no funds available for the purchase of cable, and in order to obtain enough for repair work on other lines circuit No. 20 will be abandoned and as much serviceable cable as possible recovered.

Since the interruption of the cable between Malabang and Zamboanga the military has installed a low-power wireless station at Malabang, in order to connect with their wireless station at Zamboanga, for the transmission of military message only. A wireless station is also operated by the United States Signal Corps at Jolo. In order to restore telegraphic communication between Malabang and Zamboanga it has been recommended that parts for a 3-kilowatt wireless station be manufactured and installed by the United States Signal Corps at Malabang, this bureau to reimburse the military for all expenses incurred.

During the year the cable ship was called upon to repair the following cables: Naic-Corregidor, Zamboanga-Malabang, Cebu-Calbayog-Masbate, Romblon-Masbate-Catbalogan, Ormoc-Cebu, Boac-Batangas, and to recover cable between Jolo and Siasi. The total expense incurred and chargeable to this bureau was ₱26,788.15.

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It is anticipated that the cables placed throughout the islands by the military and transferred to this bureau will cause considerable trouble, as the type used was intended as a temporary measure only. The guaranty of the manufacturer did not extend beyond three years, and most of the cables have been laid more than five years.

The operating force of the telegraph division on June 30, 1908, consisted of 34 Americans and 83 Filipinos, postmasters who also act as telegraph operators; 36 Americans and 102 Filipinos, operators; 55 Americans and 232 Filipinos, linemen. The list of operators includes a number of student-operators. Since January 1, 1906, the date of the consolidation of the telegraph division of the bureau of constabulary with the bureau of posts, 144 Filipino student-operators have received instruction in telegraphic and postal work, of whom 41 are at present occupying positions as postmaster-operators, 8 as operators, and 24 have been separated from the service by resignation or dismissal. Of the latter, 4 were postmasters, 5 operators, and 15 student-operators. On July 1, 1907, 25 students were enrolled, and during the year 91 were added, with salaries averaging ₱12 per month, and 20 without salary. From this number 50 were appointed postmaster-operators and 15 dropped from the rolls, leaving 71 in the student class on June 30, 1908. This showing demonstrates that a bright boy can develop into a fair operator inside of nine months

The question of provincial telephones has been a serious one to this bureau on account of the difficulty in exercising the proper supervision from Manila. At the last discussion on appropriations with the Philippine Commission it was agreed that on and after July 1, 1908, all expenses connected with the provincial telephone service should be paid from provincial funds. Provincial boards are authorized to meet these expenses under the provisions of sec. 13, Act No. 83, as amended by Act No. 1548, in the case of regularly organized provinces, and under those of Act No. 1845 and of paragraph (r), sec. 17, of Act No. 1396, as amended by Act No. 1822, in the case of provinces organized under the special provincial government act. Such expenditures are required first to be sanctioned by the governor-general and by the secretary of the interior, respectively.

Paragraph (b), sec. 15, of Act No. 1407, provides that the bureau of posts shall have exclusive jurisdiction and control over all telephone lines and service that come under the jurisdiction and control of the government of the Philippine Islands. In view of this provision it has been agreed that at the request of a provincial board, promising to meet all expenses in connection with the construction, reconstruction, and maintenance of the telephone system, the director of posts will, after approval by the executive secretary, designate such board as his local representative, subject, however, to official inspection at any time by him.

The governor-general has authorized the provincial board to charge subscribers a monthly toll for the use of each instrument, or to divide the cost with the municipalities or bureaus served, but the toll to be charged and the division of expenses must receive the prior approval of the executive secretary.

In order to provide a uniform method for new construction work, the following has been outlined as the procedure. A province is first required to furnish the director of posts with the following information:

1. A map or sketch showing the proposed line, with the location and name of the municipalities and barrios through which the line is to run, the topography of the country in a general way, roads and rivers, and whether swampy, mountainous, hilly, flat, wooded, or cultivated.
2. The approximate length, in kilometers, of such telephone line.
3. The number of instruments, "desk" and "wall," stated separately, desired, and the places and offices where they are to be installed.
4. The direct aid the province or municipalities can give in installing the telephone system by providing poles or labor.

Upon the receipt of this information an itemized estimate of the cost of installation will be prepared by this bureau and furnished to the province, through the secretary of commerce and police. Should the application of the province be approved by the governor-general or the secretary of the interior, as the case may be, and after a statement from the provincial treasurer that sufficient funds are available for the purpose, the provincial board shall adopt a resolution authorizing the expenditure and agreeing to reimburse the bureau of posts for the cost of supervision and labor. All material and instruments for the construction will be purchased by the province through the bureau of supply, unless otherwise expressly authorized by the governor-general.

No change in the established systems shall be made in a province without the approval of the director of posts.

Under this plan a province can perhaps save some expense by employing the provincial road force in line repairs and utilizing other employees of the province on telephone work.

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With the revenue above authorized, sufficient funds will be available to maintain each system in good condition.

POSTAL SAVINGS BANK DIVISION.

In the establishment of the division of postal savings banks the authors no doubt had in mind not only to encourage thrift and economy among the people, but to offer a place of deposit free from natural doubt and suspicion of many, and thus keep in circulation vast sums of money which, through ignorance or lack of confidence, have been hidden by owners in stockings, etc., or buried in the ground. How well their intentions have been realized is best told by the following:

At the close of business June 30, 1907, and nine months after the establishment of the first bank, 9 first-class, 81 second-class, and 143 third-class banks were in operation. During the year 6 second-class and 7 third-class banks were established; 1 third-class bank was discontinued; 3 third-class banks were changed to first class, and 19 third-class banks were changed to second class; so that on June 30, 1908, 12 first-class, 106 second-class and 127 third-class banks were in operation, making 245 banks in all, with total net deposits of ₱1,031,994.04.

A summary of the transactions of these banks by months is given in the following tables:

Individual depositors' accounts.

Month.	Accounts opened.	Accounts closed.	Accounts standing open.	Net increase in open accounts.
Balance June 30			2,331	
1907.				
July	347	90	2,588	257
August	438	117	2,909	321
September	511	96	3,324	415
October	535	117	3,742	418
November	402	95	4,049	307
December	312	138	4,223	174
1908.				
January	351	166	4,408	185
February	316	145	4,579	171
March	395	150	4,824	245
April	325	202	4,947	123
May	338	138	5,147	200
June	400	158	5,389	242
Total	4,670	1,612		3,058

Making a pro rata allowance for the first three months during the fiscal year 1907, the accounts opened the last fiscal year show an increase of 66.2 per cent.

Statement of deposits from July 1, 1907, to June 30, 1908.

Month.	Number.	Average.	Amount.
1907.			
July	1,302	₱81.95	₱106,698.54
August	1,468	69.77	102,423.14
September	1,631	65.74	107,226.58
October	1,704	73.92	125,959.49
November	1,546	97.67	150,998.18
December	1,421	86.82	123,373.94
1908.			
January	1,485	83.50	124,001.63
February	1,510	88.85	134,158.95
March	1,649	92.76	152,958.10
April	1,471	87.19	128,255.89
May	1,423	87.06	123,910.96
June	1,644	102.34	156,795.61
Accrued interest			11,449.56
Total	18,254	84.81	1,548,210.57

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Statement of withdrawals, July 1, 1907, to June 30, 1908.

Month.	Number.	Average.	Amount.	Net deposits.
1907.				
Balance June 30				₱509,463.34
July	404	₱145.59	₱58,818.15	557,343.73
August	497	127.30	63,270.77	596,496.10
September	482	128.68	60,025.00	641,697.68
October	594	109.30	64,923.92	702,733.25
November	613	113.02	69,279.62	784,451.81
December	697	111.05	77,405.63	830,420.12
1908.				
January	669	131.16	87,746.87	866,674.88
February	640	169.77	108,653.37	892,180.46
March	660	149.73	98,819.31	946,319.25
April	762	177.15	135,005.29	939,569.85
May	684	137.06	93,749.52	969,730.99
June	721	146.99	105,982.12	1,031,994.04
Total	7,423	138.18	1,025,679.87	

Classification of depositors.

NATIONALITY.

Nationality.	Number.	Per cent of total.
Americans	3,725	50.71
Filipinos	3,294	44.84
Europeans	132	1.80
Asiatics	151	2.05
Societies	44	.60
Total	7,346	100.00

OCCUPATION.

	Number.	Per cent of total.
Professional	1,030	14.02
Clerical	1,045	14.23
Student class	539	7.34
Agricultural	87	1.18
Mercantile	174	2.37
Soldiers and sailors	1,382	18.81
Policemen	116	1.58
Artisans	589	8.02
Domestics	195	2.65
Laborers	751	10.23
Children	914	12.44
Women, no occupation	325	4.42
Miscellaneous and unclassified	155	2.11
Societies	44	.60
Total	7,346	100.00

The classification "Professional" includes school teachers. The "Student class" includes all students over the age of 12 years, those under this age being classified as "Children." Under "Soldiers and sailors" are classified all enlisted men of the Army, Navy, Marine Corps, and Constabulary.

MISCELLANEOUS.

Married	1,948	26.52
Unmarried	5,354	72.88
Male	6,275	85.42
Female	1,027	13.98

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Classification of depositors' balances.

Amounts.	Number of accounts.	Average accounts.	Amount of balance.
Under ₱50	3,187	₱8.88	₱28,314.98
₱51 to ₱100	443	80.92	35,847.53
₱101 to ₱300	659	181.62	119,686.77
₱301 to ₱500	298	377.85	112,609.74
₱501 to ₱1,000	379	689.34	261,261.16
₱1,001 to ₱5,000	292	1,481.73	432,681.19
₱5,001 and over	5	8,318.53	41,592.67
Accounts without balances	126	.....	.....
Total	5,389	191.50	1,031,994.04

Act No. 1811 of the Philippine legislature, enacted February 24, 1908, authorized the bank to issue certificates of deposit in sums of ₱100 each, to be used as a bond in connection with firearm licenses only. These certificates are nonnegotiable, and the title to same can be transferred by the depositor to the insular treasurer only, but they draw the same rate of interest as ordinary deposits, to be paid at the time the certificate is surrendered. The first certificate was issued on June 10, 1908, 71 being issued to June 30, 1908, representing ₱7,100.

The approximate expenses of the postal savings-bank division were as follows:

Salaries of chief of postal savings-bank division and clerks in office of director of posts, percentage of salaries of postmasters and clerks in offices where postal savings banks are established	₱38,631.92
Printing and binding special forms	1,984.97
Other supplies, including stationery, furniture and repairs to same, proportional part of rent of offices, cablegrams, and traveling expenses of district inspectors	2,663.92
Total	43,280.81

As the law provides that all expenses properly chargeable to the administration of the postal savings bank shall be paid from the profits arising from the investment of postal savings-bank funds, there will be approximately ₱9,260.40 over and above the amount of interest paid on deposits during the year to apply thereto. In addition there is ₱17,066.86 accrued interest outstanding, which, if calculated as belonging to the present fiscal year, will leave the net expense above receipts ₱16,953.55.

The investments of the postal savings-bank funds are by law placed in the hands of the postal savings-bank investment board, composed of the secretary of commerce and police, the secretary of finance and justice, the director of posts, the insular treasurer, and a business man appointed by the governor-general.

Under the provisions of Act No. 1620 loans on real estate, bearing interest at 10 per cent, to the amount of ₱86,625, have been made. The board also purchased railway bonds to the amount of ₱249,515.55, representing at par ₱260,000, and bearing interest at 4 per cent.

The following is a statement of deposits in banks drawing interest at the rate of 3½ per cent:

International Banking Corporation	₱180,000
Hongkong and Shanghai Banking Corporation	180,000
Chartered Bank of India, Australia, and China	150,000
Banco Español-Filipino	110,000
Total	620,000

The following is a statement of the condition of the postal savings-bank division at the close of business June 30, 1908:[a]

[a] The above statement is exclusive of rent, the percentage of the cost of printing miscellaneous blank forms, and the percentage of postmasters' salaries, amounting to ₱40,585.18, which, strictly speaking, would be an expense to the bureau of posts even if the postal savings bank had not been established. As a matter of accounting, however, the postal savings-bank division should bear its portion of the entire cost to the bureau, but no adjustment had been made on the books of the bank on the above date.—Letter of acting director of posts, August 27, 1908, File 13550-29.

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RESOURCES.		LIABILITIES.	
Loans on real estate	₱86,625.00	Deposits and interest	₱1,031,994.04
Railway bonds	249,515.55	Stamps outstanding	1,344.50
Deposits in banks drawing interest at 3½ per cent	620,000.00	Unapportioned interest	26,327.26
Cash deposited with insular treasury	39,000.00		
Cash in hands of postmaster	47,458.39		
Accrued interest outstanding	17,066.86		
	1,059,665.80		1,059,665.80

In the foregoing it is shown that over 44 per cent of the deposits are represented by Filipinos, an increase of almost 10 per cent over the past year, demonstrating that the institution is gaining the confidence of the Filipino people. This is very encouraging, as the banks were primarily established for the benefit of the Filipinos, and the ultimate success of the venture must necessarily depend upon their patronage.

It has been found that the use of postal savings-bank stamps is not popular on account of the difficulty in caring for them in this climate. Under the law banks of the third class may receive deposits only by means of postal savings-bank stamps, and no single deposit may be received at a bank of this class in excess of ₱25, nor may one account be credited with more than two deposits in the same month. It is believed that this restriction has resulted in many of the third-class banks transacting no business during the year. Again, postmasters in the provinces should be permitted to pay withdrawals of small amounts to depositors without first obtaining authority from the central office. As it is now, in isolated districts considerable difficulty is experienced by depositors in obtaining small sums of money needed for immediate use, and oftentimes at least thirty days transpire between the application for withdrawal and the payment. Legislation in detail may be wise, when enacted, but precludes putting in operation salutory reforms. Therefore, it is strongly urged that the law be changed so as to enable the director of posts, subject to the executive control of the secretary of commerce and police, to prescribe rules and regulations for the government of the bank.

It is believed that the rate of 10 per cent on "gilt-edge" real estate security could be reduced to 8 per cent, and that the higher rate has been the reason why the full amount available for loans on real estate has not been placed. I would rather see the restriction on loans increased in the direction that not more than 25 per cent of the assessed valuation should be loaned on one piece of property. Too much care can not be taken in placing a loan, so that under a forced sale no part of the bank's funds will be jeopardized. With a low rate of interest we can always demand the very best security and desirable borrowers naturally look to those who offer the most advantageous terms. With a record for conservative management the bank can not help but become popular and gain the confidence of all those who may have a small surplus of money for investment.

CONCLUSION.

Seven depredation cases were carried over from the fiscal year 1907. During the year 35 cases of registry depredations, involving ₱1,512.06, and 10 ordinary mail depredations, involving ₱89, were taken up for investigation. There were five cases of misappropriation, in the total amount of ₱1,507.78, three post-office robberies resulting in a loss to postmasters of ₱212.46, one case of theft, one case of falsifying telegrams, one of dishonesty, and one theft of a mail key, which, together with the cases carried over from 1907, gives a total of 64 in all. Practically all of the money misappropriated represents a loss to the government.

The following convictions were obtained: One postmaster and one mail messenger for infidelity in the custody of documents; two postmasters and one clerk for misappropriation; two mail messengers for theft of ordinary mail, and two persons not employed in this service for theft of mail.

The following were charged during the year with the crimes specified: Two postmasters and one student-operator—misappropriation; three postmasters, one lineman, and one mail messenger—infidelity; one postmaster for falsifying telegrams, and one student-operator—theft, the latter being acquitted in the justice of the peace court.

One postmaster is to be charged with infidelity in the custody of documents, and one clerk with a violation of civil service act No. 1698.

There were dismissed 21 employees for crimes against the service, and 12 were required to make reimbursement in the total sum of ₱294 for depredations on registered mail made possible by their carelessness or failure to observe the regulations.

On June 30, 1908, forty cases remained open for investigation.

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Attention is invited to the lack of legislation covering the bureau of posts, and for this reason many crimes against the service have gone unpunished. It is strongly urged that legislation be enacted defining crimes against the postal service, and giving the director of posts power, subject to the executive control of the secretary of commerce and police, to conclude arrangements with postal departments of foreign countries for the cheaper, safer, and more convenient carriage of mail, the exchange of small sums of money by means of postal orders, and the reciprocal exchange of "parcels post" packages. He should also have authority to fix the rate to be charged for all classes of service rendered unless otherwise provided by law; to provide stamped paper of suitable denominations which when attached to mail matter or telegrams shall be evidence of the payment of service thereon; to classify and divide mail matter; to provide for the sale of waste matter and unclaimed articles accumulating in the dead-letter office; to establish and maintain registration, money order, postal savings bank, and dead letter systems in connection with the postal service; to establish post, money order, postal savings bank, telegraph and telephone offices, and wireless telegraph stations, at such places as he may deem expedient, and to discontinue any such offices whenever the efficiency of the service requires such discontinuance: to prescribe rules and regulations, and to issue permits for the installation, maintenance or operation of any system or systems of communication by wireless telegraphy.

With firm support by the legislature the bureau of posts, as constituted, can be made one of the strongest arms of the government in the establishment of peace, happiness, and prosperity, throughout the islands.

Respectfully submitted.

WM. T. NOLTING,
Acting Director of Posts.

The SECRETARY OF COMMERCE AND POLICE,
Manila, P. I.

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EXHIBIT I.

REPORT OF THE CHIEF, POSTAL SAVINGS BANK DIVISION.

BUREAU OF POSTS,
PHILIPPINE POSTAL SAVINGS BANK,
Manila, September 19, 1908.

SIR: In accordance with the provisions of section 2 of Act No. 1493, United States Philippine Commission, providing for the establishing of the Philippine Postal Savings Bank, I have the honor to submit the following report covering the operations of the Postal Savings Bank for the fiscal year ended June 30, 1908:

BANKS.

Banks established and reclassified, showing number of offices and class at close of each month.

	First class.	Second class.	Third class.	Total.	Total.	
					Increase.	Decrease.
1907.						
June 30				233		
July	9	85	142	236	3	
August	9	86	143	238	2	
September	9	87	145	241	3	
October	10	86	145	241		
November	11	89	141	241		
December	11	94	138	243	2	
1908.						
January	11	96	136	243		
February	12	97	134	243		
March	12	105	128	245	2	
April	12	106	128	246	1	
May	12	106	127	245		1
June	12	106	127	245		
Total					13	1

Total increase during year	13
Total decrease during year	1
Net increase during year	12
Number offices June 30, 1907	233
Number offices June 30, 1908	245
Average monthly increase	1
Annual per cent increase	5.15

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DEPOSITORS.

Depositors' accounts opened and closed.

	Opened.	Closed.	Open.	Increase.
1907.				
June 30	.....	.....	2,331	.....
July	347	90	2,588	257
August	438	117	2,909	321
September	511	96	3,324	415
October	535	117	3,742	418
November	402	95	4,049	307
December	312	138	4,223	174
1908.				
January	351	166	4,408	185
February	316	145	4,579	171
March	395	150	4,824	245
April	325	202	4,947	123
May	338	138	5,147	200
June	400	158	5,389	242
Total	4,670	1,612	.....	3,058

Total increase in accounts during year	4,670
Total decrease in accounts during year	1,612
Net increase in accounts during year	3,058
Number of accounts June 30, 1907	2,331
Number of accounts June 30, 1908	5,389
Average monthly increase	254⅛
Annual per cent increase	131.18

DEPOSIT FUND.

Deposits, withdrawals, and net balances.

	Deposits.			Withdrawals.		
	Number.	Average.	Amount.	Number.	Average.	Amount.
1907.						
July	1,302	₱81.95	₱106,698.54	404	₱145.59	₱58,818.15
August	1,468	69.77	102,423.14	497	127.30	63,270.77
September	1,631	65.74	107,226.58	482	128.68	62,025.00
October	1,704	73.92	125,959.49	594	109.30	64,923.92
November	1,546	97.67	150,998.18	613	113.02	69,279.62
December	1,421	86.82	123,373.94	697	111.05	77,405.63
1908.						
January	1,485	83.50	124,001.63	669	131.16	87,746.87
February	1,510	88.85	134,158.95	640	169.77	108,653.37
March	1,649	92.76	152,958.10	660	149.73	98,819.31
April	1,471	87.19	128,255.89	762	177.15	135,005.29
May	1,423	87.08	123,910.96	684	137.06	93,749.82
June	1,644	95.37	156,795.61	721	146.99	105,982.12
Annual accrued interest	.....	.....	11,449.56	.....	.....	.....
Total	18,254	84.81	1,548,210.57	7,423	138.18	1,025,679.87

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DEPOSIT FUND—continued.

Deposits, withdrawals, and net balances—Continued.

	Net deposits.		Increase.	Decrease.
	Average.	Amount.		
1907.				
June 30		₱509,463.34		
July	₱215.36	557,343.73	₱47,880.39	
August	205.05	506,496.10	39,152.37	
September	193.05	641,697.68	45,201.58	
October	187.80	702,733.25	61,035.57	
November	193.74	784,451.81	81,718.56	
December	196.64	830,420.12	45,968.31	
1908.				
January	196.61	866,674.88	36,254.76	
February	194.84	892,180.46	25,505.58	
March	196.17	946,319.25	54,138.79	
April	189.93	939,569.85		₱6,749.40
May	188.41	969,730.99	30,161.14	
June	189.38	1,020,544.48	50,813.49	
Annual accrued interest		11,449.56	11,449.56	
Total	191.50	1,031,994.04	529,280.10	6,749.40

Total increase in net deposits during year	₱529,280.10
Total decrease in net deposits during year	6,749.40
Total increase in net deposits during year	522,530.70
Net deposits June 30, 1907	509,463.34
	1,031,994.04
Average monthly increase	43,544.22
Annual per cent increase	102.56

INTEREST FUND.

Interest paid on closed accounts and annual accrued interest placed to credit of depositors and interest from investment of bank funds.

	Paid.	Received.	Increase.	Decrease.
1907.				
August	₱27.24			₱27.24
September	62.05			62.05
October	85.05	₱4,186.01	₱4,100.96	
November	125.65	1,400.00	1,274.35	
December	166.83	2,583.37	2,416.54	
1908.				
January	246.34	5,400.00	5,153.66	
February	444.14	700.00	255.86	
March	305.92	75.00		230.92
April	746.86	1,750.00	1,003.14	
May	350.06	4,400.00	4,049.94	
June	11,978.15	3,304.31		8,673.84
Total	14,538.29	23,798.69	18,254.45	8,994.05

Total increase in interest fund during year	₱18,254.45
Total decrease in interest fund during year	8,994.05
Net increase in interest fund during year	9,260.40
Average monthly increase during year	771.70

No interest from investments in previous year.

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STAMP FUND.

Bank stamps sold and redeemed.

	Redeemed.	Sold.	Outstanding.	Increase.	Decrease.
1907.					
June 30			₱637.30		
July	₱494.00	₱500.80	644.10	₱6.80	
August	818.00	1,061.65	887.75	243.65	
September	1,055.00	1,226.90	1,059.65	171.90	
October	1,070.00	1,074.75	1,064.40	4.75	
November	777.00	809.65	1,097.05	32.65	
December	717.00	700.55	1,080.60		₱16.45
1908.					
January	719.00	1,084.10	1,445.70	365.10	
February	489.00	436.70	1,393.40		52.30
March	522.00	619.75	1,491.15	97.75	
April	554.00	379.15	1,316.30		174.85
May	506.00	542.80	1,353.10	36.80	
June	474.00	465.40	1,344.50		8.60
Total	8,195.00	8,902.20		959.40	252.20

Total increase in stamps outstanding	₱959.40
Total decrease in stamps outstanding	252.20
Net increase in stamps outstanding	707.20
Amount of stamps outstanding June 30, 1907	637.30
	1,344.50
Average monthly increase in stamps outstanding	58.93
Annual per cent increase in stamps outstanding	110.96

EXPENSES.

Total cost of administration of banks as paid by bureau of posts appropriation.

Salaries of chief of postal savings bank division and clerks in office of director of posts, percentage of salaries of postmasters and clerks in offices where postal savings banks are established	₱38,631.92
Printing and binding special forms	1,984.97
Other supplies, including stationery, furniture and repairs to same, proportional part of rent of offices, cablegrams, and traveling expenses of district inspectors	2,663.92
Total estimated expenses for fiscal year 1908	43,280.81
Total earnings for year	9,260.40
Net expenses for year	34,020.41
Estimated amount of accrued interest on investments unpaid June 30, 1908	17,066.86
Estimated net expenses for year	16,953.55
Estimated average monthly net expenses	1,412.79

No interest from investments in previous year.

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INVESTMENTS.

Investment and repayment of loans of bank funds.

	Balances June 30, 1907.	Invested.	Repaid.	Balances June 30, 1908.	Net investments.
TIME DEPOSITS IN OTHER BANKS AT 3½ PER CENT.					
International Banking Corporation	₱170,000.00	₱80,000.00	₱70,000.00	₱180,000.00	.....
Hongkong and Shanghai Banking Corporation	120,000.00	120,000.00	60,000.00	180,000.00	.....
Chartered Bank of India and China	130,000.00	80,000.00	60,000.00	150,000.00	.....
Banco Español-Filipino	70,000.00	40,000.00	.....	110,000.00	₱130,000.00
PHILIPPINE RAILWAY BONDS AT 4 PER CENT.					
Lot 1	.....	192,488.88	.....	192,488.88	.....
Lot 2	.....	57,026.67	.....	57,026.67	249,515.55
REAL ESTATE MORTGAGES AT 10 PER CENT.					
No. 1	.....	1,500.00	.....	1,500.00	.....
No. 2	.....	30,000.00	30,000.00	.....	.....
No. 3	.....	37,000.00	10,875.00	26,125.00	.....
No. 4	.....	25,000.00	.....	25,000.00	.....
No. 5	.....	24,000.00	.....	24,000.00	.....
No. 6	.....	9,000.00	.....	9,000.00	.....
No. 7	.....	1,000.00	.....	1,000.00	86,625.00
Total	490,000.00	697,015.55	230,875.00	956,140.55	466,140.55

Net investments during year	₱466,140.55
Net investments June 30, 1907	490,000.00
Net investments June 30, 1908	956,140.55
Average monthly increase in net investments	38,845.04
Annual per cent increase in net investments	95.10

STATEMENT OF RESOURCES AND LIABILITIES, JUNE 30, 1908.

[Actual.]

RESOURCES.			LIABILITIES.	
Other banks: Interest-bearing time deposits		₱620,000.00	Deposit fund: Due depositors	₱1,031,994.04
Bonds: Philippine railway bonds		249,515.55	Interest fund: Surplus earned	9,260.40
Real estate loans: First mortgages on real estate		86,625.00	Stamp fund: Outstanding stamps	1,344.50
Cash on hand:				
In hands of insular treasurer	₱39,000.00			
In postal savings banks,	47,458.39			
		86,458.39		
Total		1,042,598.94	Total	1,042,598.94

[Estimated.]

RESOURCES.			LIABILITIES.	
Other banks: Interest-bearing time deposits		₱620,000.00	Deposit fund: Due depositors	₱1,031,994.04
Bonds: Philippine railway bonds		249,515.55	Interest fund: Unapportioned surplus	26,327.26
Real estate loans: First mortgages on real estate		86,625.00	Stamp fund: Outstanding stamps	1,344.50
Cash on hand:				
In hands of insular treasurer	₱39,000.00			
In postal savings banks,	47,458.39			
		86,458.39		
Accrued interest investments outstanding		17,066.86		
Total		1,059,665.80	Total	1,059,665.80

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CLASSIFICATION OF DEPOSITORS.

Classification of depositors' balances.

Amounts.	Number of accounts.	Average accounts.	Amount of balance.
Under 50 pesos	3,187	₱8.88	₱28,314.98
51 to 100 pesos	443	80.92	35,847.53
101 to 300 pesos	659	181.62	119,686.77
301 to 500 pesos	298	377.85	112,609.74
501 to 1,000 pesos	379	689.34	261,261.16
1,001 to 5,000 pesos	292	1,481.78	432,681.19
5,001 pesos and over	5	8,318.53	41,592.67
Accounts without balances	126	.....	.....
Total	5,389	191.50	1,031,994.04

Classification of depositors as to nationality.

Nationality.	Number.	Per cent of total.
Americans	3,725	50.71
Filipinos	3,294	44.84
Europeans	132	1.80
Asiatics	151	2.05
(Societies)	44	.60
Total	7,346	100.00

Classification of depositors as to occupation.

Occupation.	Number.	Per cent of total.
Professional	1,030	14.02
Clerical	1,045	14.23
Student class	539	7.34
Agriculture	87	1.18
Mercantile	174	2.37
Soldiers and sailors	1,382	18.81
Policemen	116	1.58
Artisans	589	8.02
Domestics	195	2.65
Laborers	751	10.23
Children	914	12.44
Women, no occupation	325	4.42
Miscellaneous and unclassified	155	2.11
(Societies)	44	.60
Total	7,346	100.00

Classification of depositors as to marriage relation.

Classification.	Number.	Per cent of total.
Married	1,948	26.52
Unmarried	5,354	72.88

Classification of depositors as to sex.

Classification.	Number.	Per cent of total.
Male	6,275	85.42
Female	1,027	13.98

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CLASSIFICATION OF DEPOSITORS—continued.

Classification of depositors as to societies.

Classification.	Number.	Per cent of total.
Societies	44	0.60

STATEMENT OF THE BUSINESS TRANSACTED BY OFFICERS OF THE PHILIPPINE POSTAL SAVINGS BANK FOR THE FISCAL YEAR ENDING JUNE 30, 1908.

Office.	Class.	Stamp sales.	Deposits.			Withdrawals, interest included.		
			Number.	Opened.	Amount.	Number.	Closed.	Amount.
Agno, Pangasinan	2	₱122.95	32	15	₱347.00	.....	.....	.....
Agoo, La Union [a]	3	.....	.....	.....	.....	.....	.....	.....
Alaminos, Pangasinan	3	36.50	10	3	36.00	.....	.....	.....
Alcala, Cagayan	2	16.45	20	11	71.00	3	2	₱38.26
Aliaga, Nueva Ecija	2	12.45	14	6	425.00	.....	.....	.....
Allen, Samar [a]	2	.....	.....	.....	.....	.....	.....	.....
Angat, Bulacan	2	10.10	7	5	7.00	3	1	24.00
Angeles, Pampanga	2	10.90	30	8	1,231.43	2	2	9.21
Aparri, Cagayan	2	20.25	75	27	3,411.87	13	7	375.90
Arayat, Pampanga	3	60.20	11	7	56.00	2	1	3.00
Argao, Cebu	2	252.70	34	10	1,014.00	1	1	216.27
Aroroy, Sorsogan	2	109.60	30	9	621.00	1	.....	35.00
Atimonan, Tayabas	2	.....	29	10	1,758.36	3	1	742.08
Bacacay, Albay [a]	3	.....	.....	.....	.....	.....	.....	.....
Bacolod, Negros Occidental	2	13.40	106	29	4,589.00	14	10	630.27
Bacolor, Pampanga	3	1.00	.....	.....	.....	.....	.....	.....
Bacoor, Cavite	3	20.75	9	4	16.50	2	.....	9.00
Bagabag, Nueva Viscaya	3	16.00	8	8	16.00	.....	.....	.....
Bago, Negros Occidental	3	2.20	1	1	2.00	.....	.....	.....
Baguio, Benguet	1	3.50	160	62	11,442.33	66	29	5,950.34
Bais, Negros Oriental	3	232.65	35	7	230.00	3	2	57.06
Balanga, Bataan	2	12.90	46	16	2,915.15	3	.....	111.00
Baliuag, Bulacan	2	85.75	123	29	2,413.00	7	3	246.08
Bambang, Nueva Viscaya [a]	3	.....	.....	.....	.....	.....	.....	.....
Bangar, La Union [a]	3	.....	.....	.....	.....	.....	.....	.....
Bangued, Ilocos Sur	2	7.55	62	16	4,140.00	.....	.....	.....
Basey, Samar [a]	3	.....	.....	.....	.....	.....	.....	.....
Barili, Cebu	3	1.00	1	.....	1.00	.....	.....	.....
Batangas, Batangas	1	57.85	291	66	12,843.00	55	20	4,189.13
Bautista, Pangasinan	3	12.80	10	5	10.00	.....	.....	.....
Bay, Laguna	3	31.50	25	7	27.00	.....	.....	.....
Bayambang, Pangasinan	2	36.30	45	15	1,028.00	8	2	84.01
Baybay, Leyte	2	2.45	14	6	557.00	2	2	103.64
Bayombong, Nueva Viscaya	2	4.15	70	16	5,964.32	3	.....	195.00
Binalbagan, Negros Occidental [a]	3	.....	.....	.....	.....	.....	.....	.....
Binalonan, Pangasinan	3	2.00	2	2	2.00	.....	.....	.....
Binan, Laguna	2	8.15	12	8	521.00	3	1	202.83
Binangonan, Rizal [a]	3	.....	.....	.....	.....	.....	.....	.....
Boac, Tayabas	2	37.15	31	20	632.00	7	4	420.49
Bogo, Cebu [a]	2	.....	.....	.....	.....	.....	.....	.....
Bolinao, Pangasinan	3	102.45	19	6	102.00	.....	.....	.....
Bontoc, Lepanto Bontoc	2	.....	6	2	410.00	.....	.....	.....
Borongan, Samar	2	.....	5	1	800.00	.....	.....	.....
Bulacan, Bulacan	3	197.20	87	19	200.00	6	4	36.27
Bulan, Sorsogon [a]	3	.....	.....	.....	.....	.....	.....	.....
Butuan, Agusan	2	.....	4	2	220.00	.....	.....	.....
Cabagan Nuevo, Isabela	2	187.60	8	1	200.00	.....	.....	.....
Cabanatuan, Nueva Ecija	3	35.90	10	3	46.00	4	1	185.77
Cabugao, Ilocos Sur	3	2.00	1	1	2.00	.....	.....	.....
Cagayan, Misamis	2	5.10	75	14	5,568.74	4	2	368.87
Calamba, Laguna	2	89.60	119	21	4,782.63	15	8	920.36
Calapan, Mindoro	2	6.90	30	10	1,622.00	6	2	551.27
Calasiao, Pangasinan	3	140.00	23	.....	140.00	2	2	45.63
Calauag, Tayabas	3	13.00	3	2	13.00	.....	.....	.....
Calbayog, Samar	1	.....	141	30	17,260.00	38	22	5,249.61
Calivo, Capiz	2	11.10	27	15	825.00	.....	.....	.....
Caloocan, Rizal	3	4.00	4	3	4.00	.....	.....	.....

[a] No business.

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STATEMENT OF THE BUSINESS TRANSACTED BY OFFICERS OF THE PHILIPPINE POSTAL SAVINGS BANK FOR THE FISCAL YEAR ENDING JUNE 30, 1908—continued.

Office.	Class.	Stamp sales.	Deposits.			Withdrawals, interest included.		
			Number.	Opened.	Amount.	Number.	Closed.	Amount.
Calumpit, Bulacan	3	₱149.00	17	6	₱149.00	1	1	₱15.06
Camilig, Albay [a]	3							
Camiling, Tarlac	2	223.95	140	75	289.00	18	15	131.82
Camp Jossman, Iloilo	2	0.35	85	38	5,638.00	24	19	3,490.83
Camp Keithley, Moro	1		257	70	32,103.00	26	2	3,949.75
Camp Overton, Moro	1	0.55	289	82	27,521.00	107	59	12,443.57
Camp Stotsenburg, Pampanga	1	0.10	327	110	17,788.00	136	91	9,687.00
Candaba, Pampanga	3	0.05						
Candon, Ilocos Sur [a]	3							
Capas, Tarlac	3	133.00	15	12	133.00	1		70.00
Capiz, Capiz	2	7.70	68	14	2,142.72	19	2	1,376.60
Carcar, Cebu	2	232.00	42	17	839.67	6	4	257.79
Carigara, Leyte	2	120.00	28	13	832.00			
Carmen, Cebu [a]	3							
Casiguran, Sorsogon	3	156.85	10		141.00			
Catalngan, Sorsogon	3	101.00	5	2	101.00			
Catarman, Samar	2	4.00	21	4	277.00	3	2	210.51
Catbalogan, Samar	2	21.80	68	14	4,383.84	14	2	945.68
Cauayan, Isabela	3	4.40	2	1	4.00			
Cavite, Cavite	1	12.30	1,211	168	76,490.17	397	85	51,080.36
Cebu, Cebu	1	19.40	291	80	53,335.31	68	22	21,901.91
Cervantes, Lepanto-Bontoc	2	0.40	44	9	2,327.00	2		564.17
Concepcion, Tarlac	3	3.00						
Corregidor, Cavite	2	11.80	206	38	10,756.50	24	7	827.58
Cotabato, Moro	2	30.20	134	40	9,278.00	14	5	3,088.72
Culasi, Antique [a]	3							
Currimao, Ilocos Norte	3	6.00	1	1	6.00	1	1	83.19
Cuyapo, Nueva Ecija	3	40.90	35	18	36.00			
Cuyo, Palawan	2	5.35	10	6	408.00	1		100.00
Daet, Ambos Camarines	2					3		299.00
Dagupan, Pangasinan	2		57	20	4,936.22	24	9	3,440.17
Danao, Cebu	2	2.90	5	4	12.00			
Dao, Capiz [a]	3							
Dapitan, Moro [a]	3							
Davao, Moro	2	5.95	19	9	539.00	1	1	252.07
Dinalupijan, Bataan	2	1.00	1	1	1.00			
Donsol, Sorsogon	3	50.00	2		50.00			
Dumaguete, Negros Oriental	2		66	16	4,714.00	3		230.00
Dumanjug, Cebu	3	101.00	10	4	101.00			
Echague, Isabela	2	20.40	50	14	2,150.09			
Escalante, Negros Occidental [a]	2							
Fort McKinley, Rizal	1	1.35	254	82	12,895.00	67	31	3,431.11
Gapan, Nueva Ecija	3	28.80	3	2	27.00			
Gigaquit, Surigao	3							
Ginatilan, Cebu	2	1.00	3	2	32.00			
Goa, Ambos Camarines	3	1.00	1	1	1.00	1		5.00
Guagua, Pampanga [a]	3							
Gubat, Sorsogon [a]	3							
Guiljugan, Negros Oriental	3	50.00	1	1	50.00			
Guimbal, Iloilo	3	1.60	1	1	1.00			
Guinayangan, Tayabas	3	76.00	8	3	116.00	1		50.00
Guinobatan, Albay	3	13.45	8	6	12.00	1		1.00
Guiuan, Samar	3	44.60	3	1	34.00			
Hagonoy, Bulacan	3	1.00	1	1	1.00			
Hilongos, Leyte	3	1.40	1	1	1.00			
Iba, Zambales	2	27.00	65	15	2,345.04	5	1	485.10
Ilagan, Isabela	2	10.65	97	23	4,040.00	7	2	117.43
Iligan, Moro	2		23	5	1,545.00	1		100.00
Iloilo, Iloilo	1	50.75	280	82	40,319.00	72	30	20,302.65
Imus, Cavite	3	7.85	8	3	8.00			
Indang, Cavite	3	103.70	9	5	103.00	1	1	98.41
Iriga, Ambos Camarines [a]	2							
Irosin, Sorsogon [a]	3							
Janiuay, Iloilo	3	6.00	3	1	6.00	2		14.06
Jaro, Leyte	2	326.05	41	16	740.20	2	2	25.21
Jolo, Moro	1	14.65	228	58	14,163.00	57	39	6,127.78
La Carlota, Negros Occ.	2	10.20	3	3	8.00			
Lal-lo, Cagayan	2		2	1	50.00	1	1	50.00
Laoag, Ilocos Norte	2	50.00	115	30	5,337.29	5	3	316.83
Laoang, Samar	2	3.00	53	16	2,701.00	3		230.00
Legaspi, Albay	1	51.10	342	79	19,019.00	35	7	4,935.54
Ligao, Albay	2	10.30	61	34	1,941.00	3	3	215.05

[a] No business.

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STATEMENT OF THE BUSINESS TRANSACTED BY OFFICERS OF THE PHILIPPINE POSTAL SAVINGS BANK FOR THE FISCAL YEAR ENDING JUNE 30, 1908—continued.

Office.	Class.	Stamp sales.	Deposits.			Withdrawals, interest included.		
			Number.	Opened.	Amount.	Number.	Closed.	Amount.
Lingayen, Pangasinan	2	₱14.20	67	25	₱3,566.00	9	3	₱145.16
Lipa, Batangas	3	58.00	26	9	76.00	3	.....	25.00
Loay, Bohol[a]	3	.....	.....	.....	.....	.....	.....	.....
Los Baños	2	4.95	26	3	1,622.51	14	2	982.88
Lopez, Tayabas	2	.10	17	3	272.95	2	1	54.95
Lucban, Tayabas	3	104.95	70	25	93.00	.....	.....	.....
Lucena, Tayabas	1	64.45	164	27	11,050.85	24	5	2,494.54
Luna, La Union	2	31.05	6	5	31.00	.....	.....	.....
Maasin, Leyte	2	.10	10	4	171.00	1	.....	20.00
Mabalacat, Pampanga	3	5.55	4	4	4.00	.....	.....	.....
Macabebe, Pampanga[a]	3	.....	.....	.....	.....	.....	.....	.....
Malabang, Moro	2	1.40	63	24	4,413.00	16	9	1,446.65
Malabon, Rizal[a]	3	.....	.....	.....	.....	.....	.....	.....
Malasiqui, Pangasinan	3	23.15	14	10	22.00	.....	.....	.....
Malitbog, Leyte	2	72.90	13	6	577.65	.....	.....	.....
Malolos, Bulacan	2	51.80	94	33	3,315.00	25	13	1,155.18
Mambajao, Misamis	2	3.00	8	3	357.00	.....	.....	.....
Mangatarem, Pangasinan[a]	3	.....	.....	.....	.....	.....	.....	.....
Mangaldan, Pangasinan[a]	3	.....	.....	.....	.....	.....	.....	.....
Manila	1	1,026.30	7,232	1,518	851,754.15	5,297	778	778,955.70
Maribojoc, Bohol	3	13.00	12	5	12.00	.....	.....	.....
Mariquina, Rizal	3	.....	3	2	3.00	.....	.....	.....
Mariveles, Baatan	2	5.00	7	2	13.00	2	2	18.15
Masbate, Sorsogan	2	.45	31	8	2,131.00	15	5	1,580.21
Masinloc, Zambales	3	145.00	19	4	135.00	1	.....	21.00
Mauban, Tayabas	2	81.70	12	3	79.00	.....	.....	.....
Mexico, Pampanga[a]	3	.....	.....	.....	.....	.....	.....	.....
Misamis, Misamis	2	4.00	4	4	4.00	.....	.....	.....
Moncada, Tarlac	3	62.05	24	11	55.00	3	1	34.12
Morong, Rizal[a]	3	.....	.....	.....	.....	.....	.....	.....
Naguilian Isabela	3	3.00	3	3	3.00	.....	.....	.....
Naguilian, La Union[a]	3	.....	.....	.....	.....	.....	.....	.....
Naic, Cavite[a]	2	.....	.....	.....	.....	.....	.....	.....
Nasugbu, Batangas	3	148.05	14	7	148.00	.....	.....	.....
New Washington, Capiz[a]	3	.....	.....	.....	.....	.....	.....	.....
Noveleta, Cavite	3	3.00	5	3	439.67	.....	.....	.....
Nueva Caceres, Ambos Camarines	2	.....	103	19	5,235.14	8	5	898.37
Olongapo, Zambales	1	.....	547	115	41,894.84	132	62	11,154.97
Oranl, Bataan	3	8.00	7	4	8.00	9	1	87.02
Oras, Samar[a]	3	.....	.....	.....	.....	.....	.....	.....
Orion, Bataan	3	7.00	3	1	7.00	1	1	2.00
Ormoc, Leyte	2	22.25	40	8	1,328.00	5	2	524.63
Oroquieta, Misamis	2	2.00	3	3	10.00	3	1	116.20
Oslob, Cebu[a]	3	.....	.....	.....	.....	.....	.....	.....
Paete, Laguna[a]	3	.....	.....	.....	.....	.....	.....	.....
Pagsanjan, Laguna	2	201.55	232	104	1,113.00	35	10	503.88
Palo, Leyte	3	6.30	4	4	6.00	.....	.....	.....
Paniqui, Tarlac	3	75.55	27	20	69.00	3	2	16.03
Paombong, Bulacan[a]	3	.....	.....	.....	.....	.....	.....	.....
Paranaque, Rizal[a]	3	.....	.....	.....	.....	.....	.....	.....
Parang, Moro	2	6.05	76	24	4.075.00	12	4	909.25
Pasacao, Ambos Camarines[a]	3	.....	.....	.....	.....	.....	.....	.....
Pasig, Rizal	2	40.75	50	21	1,198.00	13	6	410.35
Passi, Iloilo	3	288.80	24	8	289.00	.....	.....	.....
Pasuquin, Ilocos Norte[a]	3	.....	.....	.....	.....	.....	.....	.....
Peñaranda, Nueva Ecija	3	284.85	30	7	282.00	1	1	1.00
Pontevedra, Negros Occidental	3	68.00	5	2	56.00	4	2	57.04
Pototan, Iloilo	3	14.75	4	2	11.00	.....	.....	.....
Pozorrubio, Pangasinan	3	11.00	5	2	11.00	.....	.....	.....
Puerta Princesa, Palawan	2	.20	.....	.....	.....	.....	.....	.....
Pura, Tarlac	3	4.55	.....	.....	.....	.....	.....	.....
Quingua, Bulacan	2	365.35	157	36	361.00	10	3	106.28
Rombon, Capiz	2	15.65	59	45	1,972.33	14	11	352.90
Rosales, Pangasinan	.....	5.10	3	2	5.00	.....	.....	.....
Salasa, Pangasinan	3	3.10	2	2	2.00	.....	.....	.....
San Carlos, Negros Occidental	3	3.05	14	6	89.00	2	2	24.53
San Carlos, Pangasinan	2	213.10	15	3	593.00	9	.....	345.00
San Esteban, Ilocos Sur[a]	3	.....	.....	.....	.....	.....	.....	.....
San Fernando, La Union	1	27.90	155	41	16,407.00	46	12	7,424.19
San Fernando, Pampanga	2	34.05	74	32	3,668.33	21	10	1,832.64
San Fernando, Sorsogon	3	1.00	1	1	1.00	1	.....	20.00

[a] No business.

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STATEMENT OF THE BUSINESS TRANSACTED BY OFFICERS OF THE PHILIPPINE POSTAL SAVINGS BANK FOR THE FISCAL YEAR ENDING JUNE 30, 1908—continued.

Office.	Class.	Stamp sales.	Deposits.			Withdrawals, interest included.		
			Number.	Opened.	Amount.	Number.	Closed	Amount.
San Francisco, Cavite[a]	3							
San Isidro, Nueva Ecija	2		37	8	₱1,823.28	13	2	₱822.60
San Jacinto, Sorsogon	3	₱17.00	1		17.00			
San Jose, Ambos Camarines	3		7		240.00			
San Jose, Antique	2	1.35	48	7	3,256.00	4		250.00
San Juan de Bocboc, Batangas	3	20.00	2	2	20.00	2	1	30.15
San Luis, Pampanga	3	23.80	7	4	22.00			
San Miguel, Bulacan	3	43.15	15	4	50.00			
San Miguel, Ilocos Norte[a]	3							
San Narciso, Zambales[a]	3							
San Pablo, Laguna	2	45.00	21	2	169.00	2	2	35.23
Santa Cruz, Laguna	2	.70	51	15	2,057.69	5	1	272.00
Santa Cruz, Tayabas[a]	3							
Santa Cruz, Zambales	3	16.00	7	5	18.00			
Santo Tomas, Batangas[a]	3							
Santo Tomas, La Union[a]	3							
Silay, Negros Occidental	3							
Siquijor, Negros Oriental	3	1.50						
Sorsogon, Sorsogon	2	3.30	115	16	8,604.42	13	3	932.43
Sual, Pangasinan	3	21.00	4	2	21.00			
Subic, Zambales	3	33.00	3	2	33.00	1		25.00
Surigao, Surigao	2	6.65	21	7	1,210.00	2		26.00
Taal, Batangas	3	23.00	11	8	23.00	1	1	5.03
Tabaco, Albay	2	1.00	23	9	827.00	1		50.00
Tacloban, Leyte	1	40.05	297	69	33,218.19	80	26	13,726.44
Tagbilaran, Bohol	1	50.10	168	45	7,982.00	22	8	3,545.13
Tagudin, Lepanto Bontoc	3	89.30	6	2	87.00	1		50.00
Tanauan, Batangas	3		3		4.00			
Tanauan, Leyte	3	66.00	14	11	60.00			
Tarlac, Tarlac	2	4.25	39	12	1,780.89	3	2	64.00
Tayabas, Tayabas	2	104.30	26	8	224.50	5	2	88.06
Tayug, Pangasinan	3	8.90	10	10	11.00	2	1	140.00
Tiaong, Tayabas[a]	3							
Tolong, Negros Oriental[a]	3							
Tubigon, Bohol	3	10.05	3	2	10.00			
Tuguegarao, Cagayan	2	20.80	129	27	9,028.01	9		915.00
Tumauini, Isabela	2	59.30	11	5	142.70			
Twin Peaks, Benguet	2		4	2	275.00			
Umingan, Pangasinan[a]	3							
Urdaneta, Pangasinan	3	3.10	2	2	2.00			
Uson, Sorsogon	3							
Valencia, Bohol	3	76.00	10	6	76.00			
Valladolid, Negros Occidental	2					1	1	18.41
Victoria, Tarlac[a]	3							
Vigan, Ilocos Sur	2	43.10	197	59	11,696.98	23	12	2,550.55
Virac, Albay	2	2.00	25	4	2,124.00	2		100.00
Zamboanga, Moro	1	48.75	304	99	41,105.55	57	26	21,451.09
Annual interest					11,449.56			
Total		8,902.20	18,254	4,670	1,548,210.57	7,423	1,612	1,028,768.24
Less interest paid on closed accounts included in above								3,088.37
Total		8,902.20	18,254	4,670	1,548,210.57	7,423	1,612	1,025,679.87

[a] No business.

FORBES PRIZES.

Through the generosity of the vice-governor, W. Cameron Forbes, secretary of commerce and police, a series of prizes was offered to the pupils of the various public schools throughout the islands. These prizes, in cash and postal savings bank stamps, were awarded to the pupils of each school who first opened an account and deposited a peso in the postal savings bank. There were 126 prizes of ₱1 each awarded as first prizes and ₱0.5, ₱0.10, and ₱0.20 postal savings bank stamps to the value of ₱202.45 awarded as second, third, and fourth prizes.

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By the terms of the competition and under the direction of the superintendents and principals of schools, who gave their hearty cooperation, these prizes awakened a lively interest throughout the public-school system and demonstrated to the children, and many grown persons as well, the advantages of the postal savings bank, and in consequence a large number of new accounts were opened.

To the foregoing annual report covering the first complete fiscal year of the operation of the postal savings bank I have but little to add to the advance figures and memoranda furnished the director for incorporation in the annual report of the bureau of posts.

This report covers the operation of the central office and each of its banks in detail for the fiscal year ended June 30, 1908.

The annual gain of over 100 per cent is sufficient evidence of the prosperity of the bank and can not fail to be a constant encouragement to those whose wisdom and foresight provided the people with a safe and convenient means of caring for their savings.

The weakness of the accounting system, as originally devised, has been corrected, and the necessity for some changes in the act regulating the postal savings bank has developed by the operations of the past year.

The estimated net expenses for the year, after allowing ₱43,280.81 for cost of administration, are only ₱16,953.55. The postal savings bank has been in operation but twenty-one months.

The sum of ₱620,000, more than one-half of the total postal savings bank funds, is loaned at the rate of 3½ per cent. This allows a margin of but 1 per cent to the postal savings bank to pay the cost of administration.

It is believed that when the very high grade of securities we must of necessity require for our real-estate loans is taken into consideration, the interest rate of 10 per cent is too high. We have been able to loan only ₱86,625 on real estate in consequence.

The banks themselves are loaning our money at a less rate.

If the rate is reduced on such loans enough of our funds may be loaned to place the bank upon a self-supporting basis and to provide for a reserve fund as contemplated by the act establishing the postal savings bank.

It will also make it possible to raise the interest rate to our depositors, which is very much to be desired.

W. T. BEARDSLEY,
Chief Postal Savings Bank Division.

The SECRETARY OF COMMERCE AND POLICE
(Through the Director of Posts),
Manila, P. I.

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EXHIBIT J.

REPORT OF THE DIRECTOR OF NAVIGATION.

DEPARTMENT OF COMMERCE AND POLICE,
BUREAU OF NAVIGATION,
Manila, P. I., August 10, 1908.

SIR: I have the honor to submit the following report for the fiscal year ended June 30, 1908:

ORGANIZATION.

There have been no changes. The bureau consists of director's office; interisland transportation office; division of vessels; light-house division (sections of construction and maintenance); division of port works. The entire administrative force occupies offices on Engineer Island, with the exception of the assistant director of navigation (superintendent of interisland transportation), whose office is in the old building on the north bank of the Pasig River, familiarly known as the "office of the captain of the port."

FINANCES.

Division of vessels.—Act No. 1679 allowed ₱722,000 for the maintenance and operation of vessels. The expenditure of collections covering charges for services and supplies furnished other branches of the government was also authorized, not exceeding ₱500,000. Such receipts, including some earnings of the previous fiscal year, amounted to ₱412,609.35. The further sum of ₱318,891.95, covering refunds on account of supplies used by other divisions of the bureau, or by the marine railway and repair shop in repairing vessels for parties outside the bureau, became available for reexpenditure. Thus there was a total of ₱1,453,501.30 available for disbursement. Actual gross expenditures were ₱1,444,280.82, and the net expense of operating was ₱712,779.52. The figures for the director's and the interisland transportation offices are included in the foregoing.

Light-house division.—The appropriation allowed was ₱313,000. Of this, ₱174.370.55 was expended for current expenses and ₱132,441.89 on permanent improvements. In addition ₱77,199.40 from special permanent improvement appropriations was expended on new structures, a total of ₱384,011.84.

Division of port works.—The sum of ₱253,000 was appropriated. The expenditures included the pay of office employees, engineering staff, harbor-survey parties, the purchase of material and supplies, rental and repairs to the plant, etc. Of this amount ₱242,079.68 was actually disbursed. In addition ₱1,310,-936.87, specially appropriated for permanent improvements, was expended.

Marine railway repair-shop fund.—As explained in previous reports, this reimbursable fund is kept up by proceeds derived from charges for docking and repairing water craft. Its balance on hand has grown from ₱48,000 to ₱75,000. Out of this fund all dock and shop repair expenses must be met, including the wages of some 300 artisans employed in the shop. This surplus will be nearly used up during the coming year in making extensive repairs to the marine railway and in finishing the new 100-ton slip way, the machinery of which is on hand.

DIVISION OF VESSELS.

Fleet.—The fleet now consists of 15 cutters (each of 411 tons gross), 8 seagoing launches, 10 river and harbor launches, 5 gasoline launches, 1 auxiliary ketch, 1 sailing sloop, and 3 motor boats. There is also a diving scow, a lighter rigged as a derrick, and a dozen ordinary lighters for the transportation of freight.

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Construction work.—Two auxiliary gasoline ketches, one for Mindoro Province and the other for Samar Province, are being built at a cost of ₱12,500 each.

A light-draft, stern-wheel steamer, 40 feet in length, for use on the Agusan River, northern Mindanao, is being built at a cost of about ₱10,000.

Construction and repair work.—The planking of the cutters *Balabac, Luzon,* and *Negros* has been refastened, and some refastening has been done on the *Polillo* and the *Tablas.* The cutters are five or six years old, and a majority must have planking refastened. The cost of this is about ₱8,000 per cutter. The upper deck of the cutter *Samar* has been extended the full length and width of the ship at a cost of about ₱7,000. A 20-foot Speedway motor boat (gasoline) has been placed on the *Polillo* to facilitate transportation between ship and shore in ports where the vessel can not be placed alongside dock, and for general runabout work. A cargo boat on the *Polillo* has been equipped with a Meitz & Weiss kerosene engine. It is expected that with such auxiliaries the services of cutters will be much more valuable. A difficulty connected with water transportation is the fact that in many ports a vessel of moderate size has to anchor several miles away from shore. Rowboats as a connecting link are not expeditious.

Gasoline and kerosene boats.—In the bureau of navigation and for the provinces and others controlling small water craft the introduction of gasoline and kerosene engines promises to become quite general.

Sales of condemned property.—During the year five medium-size launches, which had been worn out in the service and were considered unfit for further use and not worth repairing, were advertised for sale and sold to the highest bidders, netting the bureau about ₱16,000.

Valuation of property, excluding real estate.—The value of the property is approximately as follows:

Present value of fleet (estimated)	₱1,847,965.12
Stores	246,490.27
Ordnance	114,878.01
Supplies and equipment on vessels	98,079.79
Spare parts of machinery	49,800.00
Tools and machinery in shops	151,974.40
Marine railway	201,563.22
Scows, lighters, etc	16,470.00
Hoisting engine, fire pump, etc	8,164.37
Total	2,735,385.18

Assistance rendered vessels in distress.—The schooner *Kodiak,* the steamer *Gamma,* and the baroto *Rafael Peliña,* found at sea in distress, were assisted to safe anchorages by vessels of this division.

Mileage made by vessels—passengers and tonnage transported.—The mileage made by seagoing vessels was 292,908; number of ports visited 5,050; passengers carried 15,296; and freight carried 6,542 tons. Mails were carried free for the bureau of posts. River and harbor launches, besides doing work for various branches of the government for pay, did a great deal of work for the division of port works without charge. The light-house tenders *Corregidor, Tablas,* and *Palawan* performed duty for the light-house division exclusively, without charge.

INTERISLAND TRANSPORTATION OFFICE.

Bills were rendered different departments, bureaus, and provinces for services performed by vessels, as follows:

Transportation of passengers	₱15,007.54
Transportation of freight	8,138.68
Rental of launches	45,781.63
Rental of cutters	215,138.84
In addition to which the different vessels on commercial runs turned in as cash collections	48,871.69
Making a total of	332,938.38

charged for transportation services.

It is estimated that the value of service rendered by the division of vessels to the division of port works in towing barges of dredged material, etc., was not less than ₱70,000, and to the light-house division in carrying light-house supplies,

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construction parties, construction material, etc., not less than ₱150,000. Thus it will be seen that the direct value of transportation services rendered by the division of vessels for the year was ₱552,938, despite the fact that a majority of the vessels operated were relegated to runs where traffic is so light that commercial vessels will not operate thereon. This is a remarkably good showing when it is remembered that the government and public alike have patronized contract steamers much more than last year.

The policy inaugurated during 1907 of establishing secondary routes, acting as feeders to the primary routes, was extended, and in most instances successfully. The following is a list of the routes opened since the last report:

8—Headquarters Zamboanga, cutter *Negros*. Ports of call: Zamboanga, Jolo, Siasi, Jurata, Sandakan (British North Borneo), Sitanki, Menado (Celebes), Kema, and Sangir.

C—Headquarters Romblon, cutter *Basilan*. Ports of call, first trip: Romblon, San Pascual, Donsol, Sorsogon, Bulan, San Jacinto, Masbate, Cataingan, San Fernando, San Jacinto, Bulan, Sorsogon, Donsol, and San Pascual.

Second trip: Romblon, Odiongan, Port Loog, Odiongan, and San Fernando.

Third trip: Romblon, Boac, Lucena, Unisan, Pitogo, Santa Cruz, Torrijos, Catanauan, Mulanay, Guinayangan, Pasacao, Mulanay, Catanauan, Torrijos, Santa Cruz, Pitogo, Unisan, Lucena, Boac, Romblon, Odiongan, Port Loog, Odiongan, Romblon, and San Fernando.

D—Headquarters Dagupan, launch *Rover*. Ports of call, first trip: Dagupan, San Fernando, Tagudin, Candon, Vigan, Candon, and San Fernando.

Second trip: Dagupan, Sual, Alaminos, Anda, Bolinao, Anda, Alaminos, and Sual.

E—Headquarters Iloilo, launch *Coron*. Ports of call: Iloilo, Bacolod, Miago, San Jose, and Cuyo.

In addition to the above, former route 3, cutter *Panay*, headquarters Manila, has been moved by changing its home station to Puerto Princesa, and its itinerary now is: Puerto Princesa, Balabac, Cape Melville, Kudat, Cagayan, Sulu, Sandakan (British North Borneo), Cagayan Sulu, Kudat, Balabac, Puerto Princesa, and Iloilo.

The demand for such routes is constantly on the increase and we are limited in our operations only by a lack of funds.

It is gratifying to report satisfactory results from the second year's experience with the contract steamers. The owners and agents have aided the government in all ways to improve conditions, and the traveling public is pleased with the change from former times, even if there still be room for improvement.

One more contract route has been established, which, like alternate route No. 9, is without subsidy, taking the place of former route No. 3, bureau of navigation, from Manila to Puerto Princesa. It is known as route No. 4 (Mesrs. Pajalte & Co.), and its schedule is as follows: Headquarters Manila, leaving every twenty days for Coron, Culion, Cuyo, and Puerto Princesa.

The Union Ticket and Information Company has had a very successful year, and will do wonders toward popularizing Manila from the tourists' standpoint as well as in the end paying its sponsors. It is now selling monthly ₱12,000 worth of tickets on interisland vessels. There has been added to this company the Interisland Express Company, which, though yet an infant industry, is doing a business of over ₱1,500 monthly.

After many months of delay the erection of a baggage-examination building, adjoining the Union Ticket and Information Company, has commenced. When this is completed Manila can raise its head with pride as a port of entry for tourists. Instead of landing at the custom-house, with its disagreeable surroundings, all passengers will disembark at the Union Ticket and Information Company's building and, keeping under cover all the time, pass into the new baggage-examination room. Having finished their business there, they may step directly into carriages or, by walking a short block, take the electric cars to their destinations.

The longest and most popular run of all the contract routes, No. 9, touching at Cebu, Zamboanga, Jolo, and the other principal ports on the island of Mindanao, including the well-known hemp port, Davao, is now operated by the steamer *Neil Maclcod*, recently overhauled by its owners at an expense of ₱90,000.

In consequence of the unusual weather conditions prevailing last fall in northern Luzon, the Rio Grande de Cagayan became impassable for contract steamers

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on route No. 1, and, to facilitate their business, the government entered into a subsidiary contract with the Compañía General de Tabacos de Filipinas, and Messrs. Ynchausti & Co., contractors on route No. 1, by which, while adverse conditions existed, these companies were permitted to charge an additional 50 per cent on freight and passenger traffic, and were also to receive a 50 per cent increase in their subsidies. Fortunately, the government will be charged a much smaller sum than was anticipated, as the total extra expense will not exceed ₱2,000.

LIGHT-HOUSE DIVISION.

Lights.—Twelve new lights of various classes were established and one discontinued. There are now 128 lights in operation, viz:

Flashing lights	29
Occulting lights	13
Fixed lights	3
Port lights	27
Lens lights	54
Electric arc lights	2
Total	128

The new light at Batag Island, on the northeast coast of Samar, seems worthy of particular mention. It is a flashing white, third-order light, 101 feet in height and 218 feet above mean low water, visible 25 miles. The tower is cylindrical in shape and the station is of reenforced concrete throughout. The illuminating apparatus is of Barbier, Bénard & Turenne (Paris) manufacture, with incandescent lighting system of 3,000 candlepower. The station complete cost ₱91,579.07. This light marks the entrance into San Bernardino Straits, used by all vessels plying from the United States via Guam, and many vessels running between Australia, the Philippine Islands, and China.

Beacons.—Ten new beacons were established, making 50 now maintained. Much new work of this character is contemplated.

Buoys.—Twenty new buoys were placed and there are now 123 maintained throughout the islands.

Inspection of light stations.—Inspection of light stations disclosed generally good conditions as to care and cleanliness. The position of chief of light keepers was created during the year, and one of the oldest and most experienced keepers promoted to it. His assistance was of great value to the light-house inspector, especially as to the features of inspection and instruction.

Keepers.—The light-house keepers, as narrated in other reports, are all Filipinos. By means of strict discipline and constant watchfulness they are held to the performance of their duties in a credible manner. Special effort is made to convey to them the idea that they are expected to deport themselves well and to be of assistance in raising the standard of living in their communities. They are encouraged to learn English and, with the help of light-house forms prepared in both English and Spanish, and an English-Spanish dictionary supplied them, are making progress. Gross negligence and breaches of the more important rules are becoming less frequent. Disciplinary measures taken vary from small fines to discharge from the service.

List of aids to navigation.—For detailed list of aids to navigation see the list of lights, buoys, beacons, and day marks published July 1 of each year.

Cebu buoy shed.—Plans were drawn and the necessary survey made to build a wharf at Opon, opposite the town of Cebu, and to construct a buoy and oil shed thereon. Some of the materials for the work were purchased out of the 1908 appropriation.

Repair shop at Manila.—The repair shop was enlarged and some new machinery added. The shop was run to its utmost capacity, doing a great deal of valuable work, including the construction of 2 fourth-order lanterns, 1 sixth-order flashing light, 1 fourth-order clockwork, 12 occulting clockworks to operate by means of weights (to replace the present system of springs on those occulting lights which have not proved very satisfactory), an electrical device for dropping the time ball on the new semaphore tower erected on Engineer Island, lamps, burners, oil tanks for light stations of 50, 100, and 200 gallons capacity, beacons made out of old railroad iron and various parts of iron and metal work for light stations, clockwork, etc., and the repair of apparataus and clockwork of light stations.

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Iron and concrete towers versus wooden towers.—The wooden towers from which the majority of minor lights are displayed have not proved satisfactory, as the combined action of the elements, the termite (white ant), and the teredo causes deterioration of this material with alarming rapidity. For some time we have been experimenting with a view to making suitable substitutes for these wooden towers. Iron and concrete towers have proved the most satisfactory. The cost of material and labor for the construction of iron towers is about the same as for wooden ones, the cost of erection is less, the cost of maintenance is less, and their durability greatly exceeds that of wooden towers. However, there are instances where iron towers are not practicable, such as sites on reefs awash at high tide or where the salt spray frequently dashes over the tower. In these cases concrete towers must be built. While the cost of construction of concrete towers is greater than that of either iron or wooden ones, the cost of maintenance is little or nothing and, barring the possibility of undermining, the concrete will last forever.

Concrete versus nipa dwellings.—There are many minor lights whose keepers are provided with houses built of nipa. The reason for this is that when the stations were constructed there were not sufficient funds to permit of building permanent dwellings. The fragility of nipa houses is well known. The total cost of upkeep of one for a few years will exceed the cost of construction of a permanent concrete dwelling. The cost of maintenance of a concrete dwelling is small and the durability indefinite, as in the case of a concrete tower, and it is considered in the best interest of the government to replace the present nipa structures with permanent concrete ones as fast as funds available permit.

DIVISION OF PORT WORKS.

On harbor improvement work handled by the division there has been spent during the past fiscal year ₱1,553,016.15. The ports at which most of the work has been done are Manila, Cebu, and Iloilo.

MANILA HARBOR.

Steel wharves.—The following work was done under contract approved May 24, 1906. The regular work on this contract was started June 1, 1907, but was included in the estimates for work done in July:

Wharf B.

1,056,431.3 pounds of structural steel	₱86,627.38
38,507.6 square feet of reenforcing metal	3,465.68
547.27 cubic yards of concrete decking	14,220.02
98 cylinders	178,380.00
2 large mooring posts	500.00
Extra work [a]	321.66
Total value of work done	284,023.74

The first pile for this wharf was driven June 1, 1907, and the cylinders were completed January 10, 1908. The first steel was placed October, 1907, and all, excepting the 45-foot bay, was in place January, 1908. The concrete decking was started May 18, 1908, and completed, excepting the first 70 feet inshore, June 30, 1908.

Wharf A.

1,287,423.7 pounds structural steel	₱105,568.81
129 cylinders	247,550.00
Extra work [b]	27.84
Total value of work done	353,146.65

[a] Raising grade of inshore cylinders bent No. 1, and removing rock from site of cylinders bents Nos. 0 and 00.

[b] Removing rock from site of bent No. 1.

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The first cylinders for this wharf were completed January 24, 1908, and the first steel placed March 2, 1908.

Wharf abutments and approaches.—The following work was done under contract approved November 4, 1907. The work was advertised September 27, 1907, and let November 4, 1907. The Atlantic, Gulf and Pacific Company was the only bidder:

1,746.5 cubic yards excavation	₱12,225.29
15,850 linear feet foundation piling	19,812.50
767.22 cubic yards concrete (abutment B)	19,180.50
1,602.17 linear feet cylindered piles (abutment B)	6,408.67
328 tons (2,240 pounds) superloading (abutment B)	141.99
Extra work [a]	1,074.81
Total value of work done	58,843.76

After the failure of the first abutment a committee, consisting of the supervising railway expert, the director of public works, and the director of navigation, was appointed to decide upon the best plan for abutments and approaches for the new wharves. After considerable discussion a plan calling for a concrete pier beyond the toe of the riprap slope, with a temporary wooden approach, was adopted by the committee and is now being constructed. The contract as let aggregates ₱111,514, but the extra work involved in making it semipermanent will bring the cost up to about ₱125,000.

The work on this contract started November 12, 1907. Some difficulty was encountered in driving the foundation piles for the B abutment. There was considerable riprap to be removed before the piles could be driven and the underlying soil was too soft to develop the bearing power required, and 23 extra piles were driven.

The work on these approaches has been carried on very slowly, owing to the contractors having so many other government contracts that they could not spare adequate plant to push this work. The contract time was to May 4, 1908, but was extended for three months without penalty to the contractors, as the interest of the government would not be injured by this delay.

West breakwater.—Under a noncompetitive bid, the contract for this work was awarded to the Atlantic, Gulf and Pacific Company and the contract approved August 9, 1907. This work called for the placing of 50,000 tons (2,240 pounds) on the sea side of the west breakwater, and this company was the only one in the Philippine Islands with the plant to properly handle the work. Fifty thousand four hundred and sixty-six and two-thirds tons (2,240 pounds) were placed, at a cost of ₱150,000.

The contract time was to February 6, 1908, but as the work was not prosecuted with vigor an extension was granted, on the condition that the contractors pay the cost of inspection, and the extra 466⅔ tons, at ₱3 per ton, represents the cost of this inspection.

The riprap was carried from the outshore end of the breakwater to a point 4,800 feet inshore and is sufficient for the present, but it is probable that some riprap will be required in a few years inshore from this point.

Luneta extension (repairs).—Under resolutions of February 15 and April 30, 1907, 304 tons (2,240 pounds) of quarry dirt, at a cost of ₱760, and extra work costing ₱94.56 were used in repairing the bulkhead. This work was completed in September, 1907, and the Luneta extension was taken over by the city of Manila, through its city engineer, on January 27, 1908.

Road across old fill.—By direction of the secretary of commerce and police an agreement was made with the city of Manila to construct a road from the Malecon drive to the new wharves for a lump sum of ₱20,000, to be paid from the appropriation for wharf sheds and abutments. The work on this road was started February, 1908, and is about one-third completed, with the exception of metaling. No payment has been made thereon.

Wharf sheds and railways.—Plans and specifications were prepared, advertised, and the bids opened May 4, 1906. All bids were rejected because the price was too high. The work was again advertised and bids opened on October 15, 1906, and again rejected.

The project was allowed to lay dormant until September, 1907, when a committee, composed of the supervising railway expert, the director of navigation,

[a] Extra work on removing rock below grade.

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the deputy collector of customs, and the deputy surveyor of customs, was appointed to investigate and make recommendations regarding system of sheds and railways required.

The recommendations of this committee relative to enlarging the wharf A shed to cover the entire deck space, to doubling the number of cross overs on the railways, and to raising the height of doors, were adopted by the secretary of commerce and police and directions given in December, 1907, to redesign the sheds and railroads.

New plans and specifications were prepared, advertised, and bids opened March 13, 1908, with the following bidders present:

Abstract of bids on wharf sheds and railways.

Contractor.	Sheds.	Railways.
J. W. Gray	₱204,058.5947	₱25,153.40
Atlantic, Gulf and Pacific Company [a]	192,928.9415	12,779.6836
J. E. Ainsworth	187,099.824	16,513.954
R. M. Loper [b]	181,814.775	18,565.412

[a] Successful bidder on wharf railways. [b] Successful bidder on wharf sheds.

Total cost as specified ₱194,594.46.

The contracts were approved April 10, 1908, and actual construction should begin October 10, 1908.

Legaspi landing and road.—Under authority of the secretary of commerce and police a launch landing was built in the basin between the Luneta extension and the old fill, at a total cost of ₱1,295.75, which was paid for out of Act No. 22 funds.

A road was also built from the Malecon drive to this landing, under verbal agreement with the city engineer, at a total cost of ₱2,210.16.

Cavite boulevard.—Under authority of Act No. 1745 designs and estimates of the cost of constructing a retaining wall for Cavite boulevard were prepared. The city of Manila has repaid ₱100,000 of the advance of ₱350,000 made by the government and construction will be started in October, 1908.

The harbor entrance.—Since the additional breakwater has been completed there has been more or less complaint from the lightermen and others that the wide entrance rendered a large portion of the harbor useless during the stormy weather. A series of observations on the wave action in the harbor were begun in December, 1907, and, when these are complete, the remedy, if remedy is needed, will be recommended.

Remarks.—The port of Manila has a combined tonnage (foreign and domestic) equal to about one-fifteenth that of New York and, if the modern system of cargo handling is to be adopted, more than the two piers already provided for will be required. To attempt to handle Manila's present trade over two piers will only tend to discredit a system which, properly installed, would save from a peso to a peso and one-half on every ton of cargo handled. An additional pier should be provided for in the coming year.

The old timber bulkhead is honeycombed by the teredo, but it is confounding everyone by its longevity. It will certainly give trouble within the next five or six years and should eventually be replaced. The objection to it at present is that it affords no wharfage space and reduces the available berthing space on each pier by 100 feet—since it is unsafe to dredge closer to it than 100 feet. A quay wall should be built between the new piers before the custom-house is built, as it will be needed in the proper handling of casco cargoes from vessels not berthed at the piers.

PASIG RIVER DREDGING.

The project, inaugurated in 1902 and followed ever since, is that of maintenance by constant dredging. At the time of American occupation there was about 12 feet of water over the bar at the mouth of the river and a minimum of 4 feet over bars in the upper river. Since 1902 an 18-foot channel has been maintained in the lower river by constant dredging, averaging 64,600 cubic yards per annum.

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In former reports the river has been divided into the lower and upper river. In this report they have been redivided, that more complete data may be obtained as to the cost of maintenance.

Deep-water harbor.—Of material, 21,360 cubic yards were removed by dredge No. 1 from the east side of the harbor and deposited in Manila Bay.

This dredge was thoroughly overhauled as to hull and machinery, and was fitted with a new ladder, with a removable extension, which enables the dredge to dig to 36 feet.

Legaspi landing.—Of material, 45,592 cubic yards were dredged from the channel to Legaspi landing by dredge No. 2 and deposited in Manila Bay. The channel was dredged to 10 feet.

Lower River.—Of material, 470,719 cubic yards were removed by dredges Nos. 1 and 2 and deposited in Manila Bay. Dredge No. 2 dredged 416,479 cubic yards thereof and the balance was removed by dredge No. 1.

In addition to the above regular dredging, No. 1, under contract with the Atlantic, Gulf and Pacific Company, dug a channel across Pasig River for the new sewer system. For this work ₱1,935.12 were received.

Dredge No. 1 worked four months and No. 2 eleven months during the past year.

City wharfage.—Of material, 15,093 cubic yards were removed from the Ayala and San Sebastian esteros by dredge No. 5 and deposited in Manila Bay. The material was brick, refuse, sand, and mud, and was very hard. The work was considerably delayed by lack of sufficient scows. The dredge worked seven months.

Middle river.—Of material, 16,849 cubic yards were removed from the river near San Felipe Neri by four months' work with dredge No. 7. If a 6-foot channel is to be maintained this locality must be dredged every year, and it is believed that much of this dredging can be avoided by properly designed river works. Studies will be made on these during the coming year. Dredge No. 7 was thoroughly overhauled and extensive repairs made to hull during the past year.

Upper River.—Of material, 42,961 cubic yards were removed from the river at its entrance to the lake by two months' work with dredge No. 3. This channel is over a mile long and rapidly fills in during the southwest monsoon. It will always give more or less trouble until a jetty is built on the western side. As this jetty would have to be 6,000 or 7,000 feet in length it will be expensive to build. An attempt will be made to form a natural embankment by planting bamboo grass on a dike formed of the dredged material. Two jetties may be necessary to control the deposits from the flood waters of the Mariquina River, which, during the extremely high stages, flows into Laguna de Bay. As this has only happened twice during the past four years it is believed that, with the control exercised by the new water system, its influence may be neglected.

Dredge No. 3 was entirely rebuilt during the past year and now has a new hull and an entirely different arrangement of machinery. As soon as her machinery is running smoothly she should show some very low unit costs.

Remarks.—A large part of the dredging plant was in a state of dilapidation, owing to repairs being delayed too long. It has been put in thorough repair at an expenditure of ₱118,176.50, and if properly cared for should give good service for several years. This expenditure was necessary in order to preserve to the government a valuable plant and, though it has materially increased the unit costs on work done by dredges Nos. 1 and 7, it should result in a material reduction in the cost of dredging in the coming year.

To properly maintain the government dredging plant each scow and dredge should be docked, chipped, and painted once in every twelve months, and it is poor economy to delay the work beyond this period, for the plant is old and requires constant attention to keep it in order. As it consists of 6 dredges, 6 steel dump scows, 2 tender barges, and 3 wooden scows, besides the 6 wooden scows now building, it can readily be seen that the work of the division of port works will require at least two and one-half or three months' use of the present marine railway. This, with the other work that this slipway is expected to do, is far in excess of the capacity of the present plant. The new 100-ton slipway will assist greatly in relieving this condition.

The most serious difficulty encountered in attempting to reduce the cost of the middle river dredging is the lack of a powerful light-draft towboat able to pass under the Bridge of Spain at any stage of the tide. The launches in use on this work have been unable to take two scows from the dredge to the dumping grounds and return in less than six and one-half hours. A new tug

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being purchased in Hongkong will remedy this. To properly serve this dredge with the present towing facilities will require a large fleet of scows and two launches, while a much smaller number of scows would be required with one powerful towboat.

PASIG RIVER WALLS.

Since American occupation there have always been more or less repairs to be made on the old Pasig River walls, and up to the beginning of the present fiscal year the cost thereof aggregated ₱10,919.56. During the fiscal year 1908 repairs to the value of ₱895.92 were made from the current appropriation.

In November, 1907, about 160 linear feet of river wall on the south bank fell in. This wall was built by the city of Manila in 1906. An investigation of the cause of failure was made by this division and, from all the data obtainable before the removal of the wall, it was the opinion that the foundation piles failed to develop the lateral stiffness necessary to resist the thrust of the fill against the wall, and they probably capsized, carrying the wall with them.

It was recommended and approved that the wall adjacent to the break be back tied. Accordingly the work was advertised and the contract let to Mr. J. E. Ainsworth, the lowest bidder. It started March, 1908, and was completed April 23, 1908, at a cost of ₱7,775.72, which was paid out of the appropriation of ₱168,000 for extending the river walls.

Upon completion of the back tying the work of removal was advertised and the bids opened May 22, 1908. These were rejected as being too high, and informal tenders requested for doing the work on rental of plant and percentage on material and labor basis. The Atlantic, Gulf and Pacific Company was awarded the work, and the contract was signed June 27, 1908. The work was started June 29, but no payment was made during the fiscal year 1908.

As soon as the work of removal is completed, or advanced far enough to fix the date of completion, a contract will be let for rebuilding this wall and for extending that to the Bridge of Spain. It is inadvisable to attempt the building of the additional wall until the work of removal is nearly completed, as two contractors' plants would obstruct the river navigation.

CEBU.

The original project, as designed by the bureau of engineering, provided for the construction of a concrete-block wall 2,600 feet long, the reclamation of about 13 acres of land along the water front, and the dredging in front of this wall to 18 and 23 feet below mean low water. This project was fully described in the annual report of the consulting engineer for 1903.

The project was later modified by enlarging the cross section of the wall and substituting concrete in mass for the concrete blocks.

The contract for this work was entered into with J. G. White & Co. (Incorporated) March 30, 1904.

Owing to delays, due to changes in the design, the actual construction did not start, until September, 1905. This work was delayed considerably by rough weather during August and September of 1906 and 1907, making it difficult to deposit concrete with a floating derrick.

Progress during the fiscal year 1908.—At the beginning of the present fiscal year the construction work had so encroached upon the area devoted to landing cargoes that only the small government wharf and the beach north of it were available for commercial use. To remedy this condition the old Smith, Bell & Co. wharf was repaired and temporarily connected to the construction trestle, a portion of which was decked over. Resolution of March 27, 1907, authorized the expenditure of ₱1,000 for the work. The actual cost was ₱402.60.

In October, 1907, the dredging in the 18-foot basin was completed, the fender piles driven, and this section of the wall (984 feet long) was opened to commercial use. In attempting to use this fill it was found to be too soft, and authority was granted to spend ₱500 (from the remainder of the ₱1,000 set aside for the Smith, Bell & Co. wharf repairs) for a temporary road across this fill.

The foundation piling was completed in February and the concrete wall on March 12.

The reclamation of the last section of the area behind the new wall was suspended during March in order to give the concrete in the wall time to gain strength. The dredging was completed on April 6, but, under the terms of the

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contract, the final measurement of the area filled will not be made until six months after the filling has been finished.

The foundation piles of the old Veloso wharf were too short to permit dredging in front of this structure with safety. It was accordingly removed and the wall connected by a timber platform to the wooden wharf, built by the government as a temporary structure in 1904. This wharf is founded upon Bornean Yacal and Dungeon piles, which appear to have withstood the attacks of the teredo surprisingly well. The structure can not, however, be expected to last more than six or seven years longer and will have to be repaired every two years during this time. The available wharfage at Cebu is 2,390 linear feet.

This work completed the improvement of the harbor of Cebu as contemplated in the contract with J. G. White & Co. It is impossible to give the exact cost of the work at this time as the final settlement has not yet been made. Under the terms of the contract the dredging is paid for as fill and can not be measured until six months after completion. It is probable, however, that the unexpended balance will be very close to ₱140,000 and will be expended in building streets on the reclaimed land and in the settlement of the Cebu "burnt area" claims.

Remarks.—A study of the effect of tidal currents on the new work was made and from the results obtained it was not deemed advisable at the time to riprap the toe of the wall. As a matter of precaution, however, soundings will be taken along the wall from time to time and, should the soundings show that erosion has taken place, the toe of the wall must be protected at once.

An attempt was made in dredging the harbor to provide one berth for vessels of more than 22 feet draft and, to this end, dredging was carried to 28 feet depth in front of the temporary wharf. This wharf, however, is too short to give satisfactory service for vessels of more than 300 feet in length. With the passing of the temporary wharf, which will occur in six or seven years, this port will have no wharfage accommodations for vessels of more than 22 feet draft. When it is decayed, steps should be taken to replace it with at least 380 feet of wall, capable of accommodating 27 feet draft, to provide for the large freighters taking hemp at this port.

The following table gives a conservative estimate of the annual saving effected by the new harbor work, even under the adverse conditions of 400 feet haul over a loose sand fill:

Article.	Foreign.		Coastwise.		Total.	Saving per ton.	Total saved.
	Imports.	Exports.	Inward.	Outward.			
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*		
Rice	37,915	.....	.....	35,700	73,615	₱0.60	₱44,169.00
Baled hemp	.....	26,463	.....	.....	26,463	1.04	27,521.52
Loose hemp	.....	.....	24,600	.....	24,600	2.08	51,168.00
Copra	.....	17,235	16,900	.....	34,135	.60	20,481.00
Sugar	.....	16,401	15,500	.....	31,901	.50	15,950.50
All others	9,251	81	41,000	36,980	87,812	.85	74,215.20
Total	47,166	60,180	98,000	72,680	278,026	.....	233,505.22

This table was compiled from figures of actual savings furnished by the leading merchants of Cebu and the tonnage figures were furnished by the Cebu custom-house. It should be noted that this estimate is based upon the saving on cost of handling only, and takes no account of that on wastage and demurrage. The saving on wastage, as estimated by the merchants, is as follows: Hemp, three-fourths per cent; rice, 2 per cent; copra, 1 per cent; and sugar, 1½ per cent. The total saving will return the value of this improvement to the people in less than four years.

ILOILO.

This project was prepared by the bureau of engineering and provided for a 15-foot channel with a least width of 300 feet from the mouth of the river to the custom-house landing, a system of dikes and levees to control the river and two slightly converging jetties across the bar at the mouth of the river, all as described in the report of the consulting engineer for the fiscal year 1903.

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The contract for this work was entered into with J. G. White & Co. (Incorporated) on March 30, 1904, and the work was started in August of that year.

The contract was completed on March 11, 1907. About 6,500 linear feet, with a width of from 300 to 400 feet, had been dredged to a depth of 16 feet and restraining dikes and two short jetties had been completed, thus completing the work at a cost of ₱525,628.35.

Progress during the fiscal year 1908.—Act No. 1650 appropriated ₱170,000 for rebuilding the quay walls along Muelle Loney and for dredging the upper river. For dredging, if the people of Iloilo raised ₱25,000 by subscriptions, ₱50,000 was to be used. As the attempt to raise this amount was a failure, the ₱50,000 of the money appropriated remained in the appropriation for construction of the walls.

A design for the Iloilo wall was made, specifications were prepared and advertised, and bids were opened March 31, 1908, with the following result: There were only two bidders; W. H. Lambert, whose bid figured ₱327.16 per linear foot, and J. W. Gray, whose bid figured ₱292.12 per linear foot on the estimated quantities. The contract was awarded to J. W. Gray and approved May 9, 1908.

To complete enough quay wall for two berthings an additional appropriation of ₱110,000 was made by Act No. 1837, passed May 29, 1908. As the contingency of an increased appropriation was provided for in the contract with J. W. Gray an additional contract will not be required.

Remarks.—The port of Iloilo is the terminus of the longest railroad line in the Visayan Islands and exports practically all of the Negros sugar crop. As the situation is at present, the only sugar carriers able to find wharfage are the Hongkong boats. The large freighters, going to Europe or the United States can not enter the river and are loaded by casco.

From data furnished by an Iloilo sugar exporter, based upon actual experience, the saving on the shrinkage in sugar amounts to ₱1.40 per ton and, from actual savings made at Cebu, the saving on handling will be ₱0.50 per ton, or a total of ₱1.90 per ton on all sugar loaded from a wharf over that handled by casco.

A project for the complete improvement of this port, embodying additional dredging and adequate quay space should be provided for by annual appropriation covering several years.

IMPROVEMENT OF THE CAGAYAN RIVER.

Under resolution of March 25, 1907, appropriating ₱6,000, Priestman dredge No. 6 was fitted up and sent to Aparri to dredge the bar at Lal-loc and to work on the improvement of the Cagayan River.

An agreement was made with the Compañía General de Tabacos de Filipinas, under which the government furnished the plant, superintendence, and coal, while the company supplied the labor and moved the dredge from place to place. The company was also to tow the dredge to Aparri and return her when required to do so.

Progress during the fiscal year 1908.—A short trial at dredging the Lal-loc bar showed that the dredge was too weak to accomplish anything and it was ordered up the river to remove snags. On July 26, 1907, owing to careless handling on the part of native engineman, the boiler exploded injuring five natives and the overseer in charge of the work. Another boiler was sent to Aparri and installed and the dredge resumed the snagging operations.

It was reported that the dredge was too weak to handle the large snags in the river and that she was accomplishing little. Accordingly, on December 31, 1907, orders were given to dismantle machinery and prepare the dredge for return to Manila. It being unsafe to tow the hull during the northeast monsoon, it was left in Camalanuigan and finally reached Manila in tow of the light-house tender *Palawan* in June last.

During February, 1908, the chief of division of port works visited Aparri and made a preliminary examination of the river from its mouth to Tuguegarao, submitting a report and recommendations on the project of improvements.

RIVER AND HARBOR INVESTIGATIONS.

Progress during the fiscal year 1908.—The following harbors have been investigated or surveyed during the present fiscal year: Bantuin Point, Laguimanoc, and Pagbilao, in Tayabas Province; Putiao Bay and River and Sorso-

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gon, in Sorsogon Province; Oras Bay and Helm Bay, Samar Province; Tacloban, Leyte Province; Dayhagon Canal and Dumanjug, Cebu Province; San Carlos, Jimamaylan, and San Juan de Ilog, in Occidental Negros Province.

In November the two survey parties were combined into one big party and, as a result of the combination, the expenses of the surveys were reduced and the amount of work accomplished increased.

Reports, with estimates of cost, were submitted on Aparri Harbor, Cagayan River, and Dayhagon Canal. The cost of this work was ₱22,414.58.

Remarks.—Probably because of the large expenditures on the harbors of Manila and Cebu nothing has been done by the government to improve and develop the smaller harbors and navigable rivers.

Notwithstanding the railway building in progress, a country with 11,444 miles of coast line and nine-tenths of its population at or near the coast, will always handle the bulk of its products by water transportation.

Under the present conditions, the loading and discharging of cargoes is carried on by means of small boats—a method always expensive and sometimes dangerous. There are many rivers which would be navigable for light-draft vessels but for the sand bars at their mouths. Some of the smaller ports require no improvement other than a small wharf.

No greater benefit could be accorded the agriculturist living near a small port or navigable river than to so improve that waterway that he could carry his crops to the market cheaper and with more certainty of their arrival in good condition for, in the Philippine Islands at least, it is the farmer who pays the freight.

A comprehensive policy of low cost improvements for small harbors and navigable rivers should be carried out coincidently with the improvements for the larger ports, since they bear the same relationship that branch lines bear to a trunk-line railway.

IN CONCLUSION.

New office building.—Act No. 1688 provided ₱43,000—half from permanent improvement appropriation and half from the current appropriation—for new office quarters over the old light-house warehouse. The second story is practically finished and will furnish the bureau excellent offices. The lower part of the building has also been fixed up for use as a general storehouse for all divisions, and the property of all divisions has been consolidated and placed therein. It is expected that considerable economy will result.

Division of vessels.—As previously shown the net expenditures for operating the division of vessels were ₱712,779.52. Considering that this includes free service to the light-house division and the division of port works, costing the division of vessels about ₱250,000 per year, and that it is the aim of the government to furnish with its own vessels reasonable transportation facilities to a number of ports of such little importance that commercial vessels do not feel warranted in making regular calls, the outlay is not large. Considering also the benefit derived by various sections of the islands through having this service, it would seem advisable to extend rather than curtail it. There are more demands for service of this character than can be met with the funds available. Two cutters are laid up because of lack of sufficient appropriation to permit of their operation. It is believed that it would be to the best interest of the government to allow sufficient money for the operation of all the vessels now owned.

Light-house division.—While good progress has been made toward lighting the islands and navigation has been made easier and shipping is safer than heretofore, still—as the greater part of the local transportation and all of the foreign is by means of water—it is imperative that the work be continued and the various harbors, ports, and important turning points be adequately marked, in a few cases by light-houses of the larger classes, which involve expenditures of considerable money.

Division of port works.—The policy of promoting trade and commerce by expending large sums on such works as will assure prompt handling of traffic at terminals and economy in operation generally should be continued. The feature of certainty as to dispatch and economy has bearing on both inter-island and foreign traffic. Without this attainment high transportation rates will prevail. As always, comparatively high freight and passenger charges on local traffic rule to-day, due largely to the lack of facilities for handling cargo expeditiously and cheaply. Attention is invited to other "remarks" under previous heading, "*Division of port works.*"

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Personnel.—On June 30, 1908, there were 1,740 officers and employees in the bureau. Of this number 116 were Americans, 8 Japanese, 132 Chinese, and 1,484 Filipinos. The Japanese are used as carpenters and the Chinese as blacksmiths, boiler makers, and carpenters in the shops. For blacksmithing and boiler making there is little prospect of replacing the Chinese with Filipino workmen. Filipino boys employed as apprentices in the machine shops take readily to that class of work and give promise of becoming efficient machinists.

Very respectfully,

FRANK P. HELM,
Director of Navigation.

The ACTING SECRETARY OF COMMERCE AND POLICE,
Manila, P. I.

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EXHIBIT K.

REPORT OF THE DIRECTOR OF COAST SURVEYS.

MANILA, P. I., *July 1, 1908.*

SIR: I have the honor to submit the following report of the work executed by the coast and geodetic survey in the Philippine Islands during the fiscal year ended June 30, 1908.

FIELD WORK.

The operations of the various vessels and shore parties are briefly epitomized as follows:

STEAMER "PATHFINDER."

This vessel was in Manila, repairing and outfitting, from July 1 to 20, when she proceeded to the east coast of Samar and first filled in a gap in the triangulation in the vicinity of Sulat Bay and Hilabon Island, after which the work was taken up at the lower end of the operations of 1906 and continued southward. The triangulation was carried across the low peninsula which separates Matarinao and Quinapundan bays, and then extended from Gigoso Point in a southeasterly direction to include Malhon and Suluan islands. The topography and hydrography were carried along the outside coast, around Sungi Point, including Suluan and Malhon islands and connected with the work of 1903 in that vicinity.

She also executed the following incidental work: Reoccupied 4 triangulation stations in Sulat Bay, located an uncharted rock off Guinan and another rock in Panoan Strait. This closed her season's work in that vicinity and she returned to Manila on October 31.

The vessel remained in Manila, repairing and outfitting, until December 14, when she sailed for the Gulf of Davao, Mindanao, to continue the general surveys in that section.

The portion of the Gulf of Davao, south of Samal Island, is about 29 nautical miles in width in its narrowest part and about 42 miles in its widest, necessitating long triangle sides, the stations of which had to be elevated in order to see across the gulf. All the shores and foothills are densely wooded and required a large amount of cutting to open the lines, and, owing to almost constant hazy weather, making it impossible to see poles or banners, heliotropes had to be used very extensively.

The foothills along the western side of the gulf south of Malalig Bay are quite thickly populated with wild people who, besides murdering Governor Bolton, have committed many depredations among the hemp planters. During the time our party was working in the gulf, four murders were committed by them on the plantations and a human sacrifice was made. As a consequence our heliotropers (native seamen from the vessel) had to be stationed in pairs and armed with carbines, revolvers, and bolos, which is doubtless the reason we had no trouble and that our men were not overpowered or their instruments, clothing, and provisions taken from them.

The triangulation was extended from Samal Island to Cape San Augustin on the east side and to station "Banos" on the western side of the gulf. Most of the mountain peaks on both sides of the gulf were located and their elevations determined.

The topography was completed along the eastern side of the gulf from Mapanga Bay to Cape San Augustin and along the western side, from Malalag Bay north to Santa Cruz and south to Port Tubalan.

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The hydrography was extended along the eastern side of and as far out as the middle of the gulf from Samal Island to Cape San Augustin and on the western side the whole area between Samal Island, Santa Cruz, and Port Tubalan was completed. Three tidal stations were established and used in connection with this work.

The season's work was closed on June 13, and that evening she sailed for Zamboanga where she arrived on the evening of the 14th, coaled ship, and sailed again on the 18th, arriving in vicinity of Dominga Shoal on the morning of the 20th. During the day the shoal was located and developed and late in the afternoon she continued on to Manila, where she arrived on the afternoon of the 21st. During the balance of the month the party was employed on office work and having minor repairs made on the vessel.

STEAMER "FATHOMER."

At the beginning of the fiscal year this party was at Catanduanes Island off the east coast of Luzon, engaged in extending the work along the east coast of the island from Yog Point to Nagumbuaya Point and in developing the important harbors and typhoon anchorages of Port Bagamanoo, Jimoto, and Kalapadan bays.

By carrying this work to Nagumbuaya Point and connecting there with the steamer *Pathfinder's* work of 1903, we completed the survey of all the shore and adjacent waters of Catanduanes Island.

This was the first actual survey of this coast and the results show a startling difference from the old Spanish charts.

During the progress of this work the *Fathomer* used about 60 tons of coal obtained from the Batan mines, but the test was neither satisfactory nor fair, as her grate bars were not properly spaced for its use.

After the completion of the above-named work the *Fathomer* proceed to Rapurapu Strait where she located and developed a reported shoal, then proceeded to Batag Island and determined the position of the new light-house and also developed Wright and Fisher banks and two small shoals in the vicinity of Palijon Island and carried the work westward from Catarman to a junction with the work of 1902 in San Bernardino Strait.

The party would have continued the filling in of the blank area in the hydrography along the north coast of Samar, but the heavy weather which makes this vicinity very unfavorable for field work in the fall of the year brought work to a close on October 26 and the vessel reached Manila on the 31st, where she remained repairing and outfitting until December 21, when she sailed for the south and arrived in Zamboanga on the 25th, and was detained there by unfavorable weather during the remainder of the month. On January 1 she got underway again and proceeded to the upper part of Sibuguey Bay and began field work at the limits of the former survey in the vicinity of Buluan Island and extended the triangulation, topography, and hydrography around the upper end of the bay and down the eastern side, which is very foul with dangerous reefs extending well offshore; then round the southern end of Olutanga Island and up into Dumanquilas Bay, connecting with a survey made by the officers of the U. S. S. *Yorktown* in 1903.

Six uncharted reefs, with depths of from 2¼ to 6 fathoms over them, and one bank over 5 miles across, surmounted by a rocky patch with only 2¼ fathoms over it were found south of Sibuguey Bay, nearly midway between the land on both sides, all of these rocks being surrounded by deep water.

A reported 9-fathom bank due south of the entrance to Dumanguilas Bay in about the latitude of Lutagan Point was searched for, but no indication of it could be found.

Five tidal stations were established and used during the progress of this work.

The extension of the triangulation to the eastward of Sibuguey Bay involved much hard work climbing mountains and opening views, and was fraught with many difficulties. Several schemes that at first seemed feasible were tried, only to be abandoned after spending many days clearing away timber.

During the season, while the vessel was at Zamboanga for coal, a plane-table survey of the shore line in front of the town was made and a hydrographic survey along the water front from the eastern side of the military reservation to a point as far west of the town as any vessels are likely to approach the shore. This work was carried out into the strait until depths of from 10 to 20 fathoms were reached. A special examination was made for a shoal reported

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about 350 meters southeast of the long wharf, but no indications of it were found.

While this work was going on the vessel searched for two reported shoals, with depths of 3½ to 3¾ fathoms, in Basilan Strait to the southward of the eastern end of Little Santa Cruz Island. No indications of the northern shoal could be found, but the other shoal was found as reported, and enough discrepancies were discovered in this section of the chart to indicate that the Spanish survey is unreliable and that a resurvey of Basilan Strait, especially near the Basilan coast, should be made.

On June 27 the season's work in the vicinity of Dumanquilas Bay was closed, with the usual swinging of the ship for magnetic variation, and the vessel started for Zamboanga for coal. While en route a shoal was sighted well to the southward of our work in Sibuguey Bay and a thorough examination of it was made, several soundings of 3 fathoms having been obtained.

At the close of the fiscal year the vessel was at sea en route from Zamboanga to Manila.

STEAMER "ROMBLON."

At the beginning of the fiscal year this vessel was on the eastern coast of Luzon, and the party engaged in the survey of San Miguel Bay. On July 15, having completed that bay, they took up the work in the vicinity of the Calanguas Islands with a view to connection with the work in Lamon Bay. The topography of these islands was completed on August 15.

In the extension of the triangulation to the westward from the work of 1906 it was found impracticable to proceed without first strengthening the scheme, which caused considerable extra work and delay.

The hydrography was progressing well, when, on August 20, while sounding in the vicinity of Roses Reef, they found a pinnacle rock with the vessel, instead of with the lead, the vessel striking hard. This serious and unavoidable accident put an entirely unexpected end to the season's operations and the work had to be left in an unfinished state.

Temporary repairs were made at Mercedes, and on September 1 the vessel started for Manila, but, owing to her damaged condition and bad weather, did not reach there until September 8, when repairs were immediately commenced.

While these repairs were in progress a boat party from the vessel was employed on special development work and on the location of the buoys in the harbor.

On October 25, having completed repairs and outfitting, she sailed for Lucena, where the party continued the survey of the west coast of Luzon, Marinduque, and adjoining islands, eastward from the termination of the work of 1906.

The triangulation was started from stations Bantegui and Banalacan, of the main scheme, and extended to the eastward between Marinduque and Luzon as far as Point Salomague and Lipata Point. They also established two stations on the divide of the isthmus for the purpose of connecting with the triangulation on the eastern coast of Luzon in vicinity of Lamon Bay.

The topography was extended along the Luzon coast from Pitogo to Matataha River and from Port Banalacan to Point Salomague, on the Marinduque coast, and also included the Anibayas Islands.

The inshore hydrography developed the coast of Luzon from Mabic Point to the Matataha River and the Marinduque coast from Point Santa Cruz to Point Salomague, and in addition special development was made at Pitogo and Mulanay anchorages, Catawanan Bay, Santa Cruz Harbor, and Port Banalacan.

The offshore hydrography, with ship, filled in the area between the inshore work above referred to and in addition extended south of Salomague Point to a point about 5 miles east of Point Marlanga and across to a junction with the inshore work off Matataha River, also the space between the hydrography executed prior to January 1 and the northwest coast of Marinduque.

Tidal stations were established at Pitogo, Catanawan Bay, and Santa Cruz Harbor. Current observations were made in Mompog Pass and magnetic observations at Romblon.

On April 10 field work was closed in that vicinity and on the 12th the vessel arrived in Manila, where she was overhauled and outfitted and the records, sheets, and reports prepared to turn in to this office.

On May 18 she sailed for Coal Harbor, Batan Island, to develop the inner harbor, at the request of the military authorities. She arrived there on the 21st, reran the shore line, observed a solar azimuth, and made the necessary

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soundings and tidal observations. This work was completed on the 25th, and on the following day she sailed for Mercedes, where she arrived on the 27th; the next day coaled ship and located three new buoys recently placed in the mouth of the Daet River. On the 20th she proceeded to Capalonga and erected an automatic tide gauge in the estuary of that river and on the following day sailed for Atimonan, where the triangulation was taken up to connect the main scheme, which was brought across the divide from the west side of Luzon, with the triangulation of Lamon Bay and again with the triangulation of Calaguas Islands. Almost continuous cloudy and rainy weather interfered with the use of heliotropes, which were required on all the lines, and a great deal of steaming was demanded of the ship to keep all parties moving, but the connection was completed before the end of June and we now have a continuous scheme of triangulation from the north coast of Luzon to the southern extremity of Samar.

The tidal observations show a gratifying improvement in quality since a regular tidal observer has been employed. Heretofore it had been the custom to detail one of the seamen of the vessel for that purpose, and the results were far from satisfactory.

STEAMER "MARINDUQUE."

Was in Manila repairing and outfitting from July 1 to 9, and on the 10th sailed for the east coast of Luzon, where she arrived on the 14th, and took up general surveys of Lamon Bay and vicinity in continuation of the work of the previous year.

The triangulation was taken up in the vicinity of Alabat and Atimonan and carried around the southern end of Lamon Bay and out Calauag Bay to Pangao Point.

The topography was completed around the shore of Luzon from Atimonan to Dagdap, also along the shore of Alabat Island from Muel around the south end of the island and up the eastern shore to Gerado Point, where it connected with the work of the preceding year. She also made a survey of Balesin Island.

The hydrography included the south end of Lamon Bay, Calauag Bay, and was extended out to Dagdap Point, Balesin and Cabaleto islands.

The season was closed on October 13 and the vessel sailed for Manila, where she arrived on the 15th and was engaged repairing and outfitting until the 22nd, when she sailed for Palompon, Leyte, where she arrived on the 24th, and on the following day resumed the general surveys between Cebu and Leyte and extended it northward from the previous work in that vicinity.

The triangulation was started from the line "Bulalaqui" to "Malcamko" and carried around the northern extremity of Cebu Island and into the northern entrance of Tanon Strait, ending on the line "Escalante" to "Putad" and also around the north end of Leyte Island and through Biliran Strait into Carigara Bay.

The topography was completed along the east coast of Cebu from Bantulin to Campatoc Point, along the west coast of Leyte from Villaba around Rabin Point, through Biliran Strait into Carigara Bay, and also around the south and west shore of Biliran Island from Matuntun Point to Tincansan Island.

The hydrography included the area between Cebu and Leyte, from Bantulin and Duljugan points on the south to the northwest end of Biliran Island and through Biliran Strait into Carigara Bay.

Field work was closed in this vicinity on April 2, and the vessel arrived in Manila on the 4th, where she remained for repairs, outfitting and compiling their records and reports until May 18, when she sailed for the eastern coast of Luzon, arriving at Atimonan on the 22d. Field work was immediately commenced, but stormy weather prevailed during the remainder of the month, and the completion of one topographic sheet and some signal building was all that could be accomplished. The month of June, however, was much more favorable for field work and the triangulation between Polillo and Luzon, four topographic sheets having been completed.

Numerous difficulties were encountered in advancing the triangulation. At some of the stations four or five days' clearing was required. Four scaffold signals had to be erected and this consumed considerable time, the heights of these scaffolds being 30, 40, and 150 feet, approximately. Whenever possible a large tree 4 or 5 feet in diameter at the base was selected as a center, these trees being often over 150 feet high and very straight, with few branches. They were sawed off as high up as possible and the theodolite mounted on top. Around the tree, and entirely free from it, a quadrilateral scaffold was built for the observer to walk on, so as not to jar the instrument. The triangle clos-

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ures in which these scaffolds were used were found to be remarkably good, averaging about three seconds, the weather being calm and favorable for observing.

At the close of the fiscal year the work was still in progress.

STEAMER "RESEARCH."

This vessel and party were at Iloilo from July 1 to 6, engaged in repairs and office work. On the 7th they resumed work on the north coast of Negros Island, combining triangulation, topography, and hydrography, which was carried on until October 19, when a junction was made with the work of 1902 at mouth of Danao River.

The topography includes the shore of Negros Island from Bito Point to Danao River and outlying islands. At the Guimugahan River it was carried 7 miles inland to the head of navigation.

The hydrography was carried from 10 to 15 miles offshore, ending on a line from Baliguian Island to the southwest of the Don Islands, and thence southward to the mouth of the Danao River.

At the close of this work the vessel returned to Iloilo, and the party was engaged in office work until November 1, when work was resumed on the northeast coast of Panay, extending the topography and hydrography from the limits of the work of last year.

The hydrography was taken up on a line from Malangaban Island to Baliguian Island and thence to Macajolum Shoals, and extended northward to latitude 11° 27′ and eastward to longitude 123° 27′. This was all outside work, extending about 15 miles offshore in depths ranging from 3 to 30 fathoms. All the shoals indicated on the Spanish charts of this area were located and developed and, in addition, four others previously uncharted. A very thorough search was made for "Molena Shoal, P. D.," but no trace of it could be found. The passage south of Sicogon Island is entirely clear, having not less than 17 fathoms. The native fishermen do not know of any such shoal as that indicated on the old charts.

The topography consisted of two sheets, one including Sicogan and Gigantes islands and the other extending from the vicinity of Magalumbi Island to Gogo Point, and including the islands to the east and northeast.

Field work was closed on January 11, and the vessel returned to Manila on the 20th, where the office work was finished up.

The vessel remained in Manila, undergoing repairs and outfitting, until March 5, when she sailed to resume the work off the northeast coast of Panay, and by June 20 the hydrography had been extended about 15 miles to the northward and eastward, and she then moved to Batangas Island and spent the remainder of the month in topography and reconnoissance for a base-line site.

During the season about 25 sandy and rocky shoals were carefully developed. Some of them are shown on previous charts and others are new discoveries. All soundings shown on chart No. 4417 were found to be correct in the approximate positions given, except three shoal soundings of some importance, which could not be found, although a careful examination of the vicinity was made.

The inside passage from Tagil Pass to Bulacaue Point, which had formerly been used only by very small coasters, was found to have 10 feet at low water.

To aid in the offshore work two large bamboo buoys, 25 feet square and of an equal height, were made and anchored with heavy ground tackle and short scope of chain. They were seen with ease at a distance of 8 miles.

No accident to the vessel or delay in the work occurred during the season, and the weather conditions were generally favorable.

Supplies and mail were obtained from Iloilo, where small repairs were also readily made.

LAUNCH "MORVEN."

This launch was chartered and the party organized to take up the survey of the southern end of Tanon Strait and left Manila on July 2, arrived at Dumaguete, Negros Island, on the 3d, and commenced work on the 5th.

A base line was located and measured just north of Dumaguete and the triangulation was expanded from this base to the northward through Tanon Strait as far as Guijulugano on the Negros side and Tanguil Point on the Cebu Island side.

An azimuth was observed from the stone tower of the church at Dumaguete, which was connected with the triangulation.

The topography on the Cebu Island shore of the strait was completed from Tanon Point at the southeastern extremity of Cebu Island to Tang-

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and along the Negros Island shore from Dumaguete to the barrio of Calagcalag.

The hydrography was completed from the southern entrance of Tanon Strait to Tanguil Point on the eastern side and to Calagcalag on the western side.

They also made a survey of Port Canoan, Siquijor Island, at the request of Commissioner Forbes.

They closed field work on December 19, returned the launch to her owners in Iloilo, and arrived in Manila on December 27, where the party was disbanded.

LAUNCH "ERICA."

This party was organized, equipped, and outfitted early in July and took passage on the steamer *Pathfinder*, sailing from Manila on the 23d, and were landed at Libas on July 25, where temporary quarters were obtained.

The launch *Erica*, which had been chartered for the work, arrived on the 28th, and a whaleboat for the inshore hydrography was obtained from the steamer *Pathfinder*.

A tide gauge was erected at Libas and maintained throughout the season.

The work assigned to this party was to close the gap between the northeast point of Panay and the former work in vicinity of Capiz.

The line Magingonigo light-house to Jintotolo light-house was used as a base and in three figures a connection was made with a line in the triangulation of 1903 in vicinity of Capiz. The outlying islands, Zapatos and Olutaya, made the laying out of a strong scheme comparatively easy, although some difficulty was experienced in locating stations in the low, flat country south of Piraro Point and west of Tinagongdaget Inlet.

The topography presented no difficult features, except that it was impracticable to make a plane-table survey of Tinagongdaget Inlet on account of the fact that it was bordered on all sides by mangrove swamps and the water too deep for setting up an instrument. A sextant survey controlled by triangulation was therefore made of the inlet.

The greater part of the work was hydrography, which extended from Manigonigo light-house to Colasi Point and out to and including Cucaracha Shoal and the Zapato Islands.

Field work was closed on November 2, and on the 14th the party started for Manila on the launch, arriving there on the 16th, when the party was disbanded and the officers attached to the office to complete their records, platting, and reports.

LAUNCH "MORVEN."

At the request of the insular government for a survey of the north and west coasts of Bohol Island, Mr. C. V. Hodgson was directed to organize and equip a party for that purpose and the launch *Morven* was chartered for their use.

The party sailed from Manila on February 12 by regular steamer for Cebu, where the launch had been ordered to meet them. On arrival there the instruments, outfit, and supplies were transferred to the launch, and they sailed for Ubay, Bohol, on the 16th instant.

Here they measured a base line 2,675.54 meters in length, and set up an automatic tide gauge.

The hydrography was commenced on March 1, using plane-table triangulation as a base until the regular triangulation could be extended from the work of the previous season.

The hydrography in that vicinity was extended from 10 to 14 miles offshore, so that they continued using Ubay as a base until May 4, on which date they moved to Jetafe, at the northwest corner of Bohol Island.

The triangulation was extended from Assistant Denson's work across to Cebu Island and connected with Assistant Gilbert's triangulation of 1902 in the vicinity of Cebu Harbor.

Three parties were kept in the field almost continuously, but the large amount of hydrography which extended out to the Danajon Bank has kept that part of the work in arrears and the close of the fiscal year found them still at Jetafe, engaged in bringing up the back hydrography with both launch and cutter, and a plane-table party extending the topography down the west coast of Bohol Island.

TIDAL AND MAGNETIC OBSERVATIONS.

An elaborate series of tidal observations forms part of the programme of all the hydrographic parties. In addition, two self-registering tide gauges have been maintained throughout the year, one at Manila and the other at Iloilo.

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In connection with the division of port works of the insular bureau of navigation we operate a self-registering gauge at Cebu and receive its records. Regular magnetic observations also form part of our plan of work.

MANILA SUBOFFICE.

This office is in charge of the director, who exercises general supervision over all the divisions; decides on and lays out the work of the field parties and the assignment of officers; plans schemes for new charts; recommends new editions; reviews chart drawings, sailing directions, notice to mariners, and other information prepared for publication; examines results of field operations; passes on all requisitions for supplies and repairs; and acts as general disbursing agent for all expenditures made for the coast and geodetic survey in the Philippines, reviewing and checking all accounts and vouchers before transmitting them to the disbursing agent in Washington or the insular auditor here for final adjustment.

OFFICE DIVISIONS.

Computing division.—This division takes care of all the survey records, except the topographic and hydrographic sheets, receives and registers all original records and prepares them for transmission to Washington, revises and verifies all field computations, prepares all data for the extension of surveys and preparation of charts and supplies, information which is constantly being requested by the army, navy, insular bureaus, and general public for engineering, cadastral, and other purposes.

Drawing division.—This division receives and registers all topographic and hydrographic sheets turned in by the field parties, completing and verifying them, makes drawings for new charts and prepares them for publication in Washington, prepares projections for the field parties, and also makes the tracings and drawings that are constantly being called for by other bureaus of the United States and insular government.

Nautical division.—Capt. J. C. Dow, nautical expert, in charge, receives and issues all charts and tide tables; prepares and corrects the sailing directions for the Philippine Islands; compiles and issues the monthly notice to mariners; gives information to shipmasters and others, and corrects their charts when requested; receives and files all letters and reports referring to reported dangers, etc. At the request of the bureau of navigation Captain Dow has been selected as a member of the light-house board of the archipelago, and also assists in the inspection of our vessels, whenever extensive repairs and outfitting are required.

Correspondence and property division.—Mr. W. H. MacDonald, chief clerk, in charge, looks after all the clerical work; receives and issues all instructions, stationery, and general property belonging to both the United States and insular governments; also looks after and keeps all the accounts, which, owing to the difference in the requirements of the two departments under which we are operating, makes an unusually heavy amount of clerical work. This division is very much in need of a good bookkeeper, and Mr. MacDonald has been recommended for a transfer from the insular to the United States pay roll with an increase of pay, which will allow us to fill his place with a bookkeeper.

Geographical.—This is a new division recently created and attached to our bureau, for the purpose of collecting and indexing all maps, sketches, descriptive reports, field notes, general information, etc., that can be obtained from the army, navy, insular bureaus, provincial governors, and other officials for the purpose of compiling a new map of the islands which could be corrected from time to time as additional information is received, and to have a place where all the latest data and information could be obtained without having to visit several different bureaus as at present. Additional rooms adjoining our present office were assigned for this purpose and two draftsmen-cartographers, who were selected and appointed in Washington, reported here on April 24. The rooms are now furnished and we are ready to take up the work as data comes in, but at the close of the fiscal year the executive order concerning this matter had not been published (issued August 3).

The joint arrangement between the United States and insular governments, under which the survey is operated, remains unchanged.

There have been constant exchanges of information and other courtesies between this bureau and the various army, navy, and insular officials. The prompt and pleasant manner in which most of our requests have been complied with is very gratifying.

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We have supplied the army with a great deal of data and information for their military surveys, have occasionally loaned them instruments, and have furnished the navy and insular bureaus with data and information from time to time.

Miscellaneous.—The efficiency of the steamers *Marinduque* and *Romblon* for our work would be greatly increased if each had a steam launch, as at present they have to use pulling boats for both hydrography and topography, which in this climate is not only hard on the men but results in the loss of considerable time, for it is impossible to expect a crew to keep up a steady pull all day, and I think the additional work that could be accomplished with launches would soon repay us for their cost.

Both these vessels are to be supplied with refrigerating appliances. This is a serious want or in fact an absolute necessity, for in remote places they often have to go for months without fresh meat. Authority to purchase has been granted and the refrigerating plants ordered. The *Romblon* also needs a new shaft, which has been ordered, and it is reported that she will soon need refastening. The *Marinduque* is badly in need of a new windlass, and one has been ordered. The *Research* was in need of a new windlass, but one was ordered by my predecessor and has arrived and been installed.

STATISTICS OF FIELD WORK.

The following tabular statements show in detail the field work executed during the fiscal year ended June 30, 1908; also the number of persons engaged in coast surveys, and a comparison with work done by the English admiralty survey.[a] These statistics were compiled from the reports of the chiefs of field parties and are fairly accurate, but the records and sheets have not all been turned in to this office for checking.

COAST LINE.

	Statute miles.
Total length of general coast line of the Philippine Islands (approximate)	11,511
Total length of general coast line surveyed up to June 30, 1907 (21.5 per cent approximate)	2,474
Total length of general coast line surveyed during fiscal year ending June 30, 1908 (8.2 per cent approximate)	944
Total length of general coast line surveyed up to June 30, 1908 (29.7 per cent approximate)	3,418
Total length of detailed coast line surveyed during the fiscal year ending June 30, 1908	1,573

The general coast line was measured on charts of scale 1/400,000, using 3-mile steps of dividers, omitting islands and bays less than 3 miles long.

The detailed coast line was taken from the original topographic sheets and include all small bays and islands.

Chart drawings forwarded to Washington, D. C. for printing.

[July 1, 1907, to June 30, 1908.]

Catalogue No.	Title.	Chart or edition.[a]
4714	Mindoro and adjacent coasts, Manila Bay to Romblon and Panay	N. E.
4421	Catarman to Oras Bay	N. C.
4447	Cebu Harbor and approaches	N. E.
4416	Iloilo and Guimaras straits	N. C.
4223	San Miguel and Lamit bays	N. C.
4422	Oras Bay to Matarinao Bay	N. C.
4462	Matariano Bay	N. C.
4426	Southwest coast of Leyte, Ormoc Bay to Maasin	N. E.
4640	Port Misamis	N. C.
4717	Calamian Group to Cagayan Islands	N. E.
4349	Malampaya Sound, Palawan	N. C.
4222	Lagonoy Gulf to Lamit Bay and Catanduanes Island	N. E.
4724	Southeastern Mindanao	N. E.
4720	Balabac Strait	N. E.
4629	Matimus Point to Tapian Point, southwest Mindanao	N. C.
4270	Manila and Subic bays to Verde Island Passage	N. E

[a] N. C. is abbreviation for new chart; N. E. is abbreviation for new edition.

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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Chart drawings in progress June 30, 1908.

Catalogue No.	Title.	Chart or edition.[a]
4234	Subic Bay and vicinity	N. C.
4417	Northeast coast of Panay	N. E.
4624	Northern part of Gulf of Davao	N. C.
4719	Surigao Strait and Leyte	N. E.
4415	West and south coasts of Panay	N. C.
4225	Lamon Bay, Agos River to Sogod Bay	N. C.
4269	Harbors in Catanduanes Islands	N. C.
4713	Eastern Luzon	N. E.
4722	Sulu Archipelago	N. E.
4630	Delta to head of Mindanao River	N. C.
4457	Guinan and approaches	N. E.
4423	Southern part of Samar	N. E.
4268	Harbors on east coast of Luzon, Canimo Pass to Pitogo Bay	N. C.
4458	Harbors in Cebu and Negros	N. E.
4413	North coast of Panay	N. C.
4718	Panay, Negros, and Cebu	N. E.
4224	Sogod Bay to Daet	N. C.
4232	Manila Harbor	N. E.

[a] N. C. is abbreviation for new chart; N. E. is abbreviation for new edition.

Charts published in Washington, D. C.

[July 1, 1907, to June 30, 1908.]

Catalogue No.	Title.	Chart or edition.[a]
4209	Lingayen Gulf	N. E.
4210	Dasol Bay to Iba	N. C.
4222	Lagonoy Bay to Sisiran Bay and Catanduanes Island	N. E.
4220	San Bernardino Strait and approaches	N. E.
4237	Tabaco Bay to Legaspi and western part of Albay Gulf	N. E.
4243	Manila and Cavite anchorages	N. E.
4266	Ports Masinloc and Matalvi and Palauig Bay	N. E.
4267	Lucena anchorage, Pagbilao Bay, and Port Lacuimanoc	N. C.
4343	Puerto Princesa	N. E.
4447	Cebu Harbor and approaches	N. E.
4416	Iloilo and Guimaras Strait	N. C.
4460	Iloilo and part of Guimaras Strait	N. E.
4426	Southwest of Leyte, Ormoc Bay to Maasin	N. E.
4641	Murcielagos Bay	N. E.
4648	Davao and Pakiputan Strait	N. C.
4645	Vicinity of Zamboanga, Caldera Bay to Masinloc anchorage	N. C.
4712	West coast of Luzon, Manila Bay to Candon Point	N. E.
4714	Mindoro and adjacent coasts, Manila Bay to Romblon and Panay	N. E.
4719	Surigao Strait and Leyte, with parts of Samar, Mindanao, and Bohol	N. E.
4722	Sulu Archipelago	N. E.
4723	Western Mindanao	N. E.
4421	Catarman to Oras Bay	N. C.
4223	San Miguel and Lamit bays	N. C.
4422	Oras Bay to Matarinao Bay, east coast Samar	N. C.
4462	Matarinao Bay, east coast Samar	N. C.
4640	Port Misamis, north coast Mindanao	N. C.

[a] N. C. is abbreviation for new chart; N. E. is abbreviation for new edition.

I append herewith two base maps, one showing graphically the progress of the work during the fiscal year ending June 30, 1908, and the other the total amount of work executed up to the same date.[a]

Respectfully submitted.

E. F. DICKINS,
Director of Coast Surveys.

The SECRETARY OF COMMERCE AND POLICE,
Manila, P. I.

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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REPORT OF THE SECRETARY OF FINANCE AND JUSTICE.

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REPORT OF THE SECRETARY OF FINANCE AND JUSTICE.

DEPARTMENT OF FINANCE AND JUSTICE,
Manila, October 26, 1908.

GENTLEMEN: The secretary of finance and justice has the honor to submit for your consideration the seventh annual report of the work performed during the fiscal year 1908 by the several bureaus and offices under his executive control. This report, unless otherwise stated, will cover only the year ended June 30, 1908.

The writer assumed charge of the department on July 1 of this year, relieving the Hon. James F. Smith, governor-general, who had been acting secretary of finance and justice for nearly two years, since the resignation of the Hon. Henry C. Ide from the office of governor-general of these islands.

JUDICIARY.

SUPREME COURT.

The condition of the docket of the supreme court, compared with that of former years, is more satisfactory and shows that the court can transact business without delay. On July 1, 1908, there were 513 civil and 343 criminal cases pending in this court, against 420 and 478, respectively, for the preceding year, a total of 856 as compared with 898 cases. During the year 406 civil and 313 criminal cases were filed against 384 and 279, respectively, during the preceding year, or 719 as compared with 663 cases. There were decided 310 civil and 324 criminal cases, as against 221 civil and 359 criminal cases during the preceding year, a total of 634 cases as compared with 580 cases. There were otherwise disposed of 107 civil and 104 criminal cases, the figures for the preceding year being 70 and 55, respectively. and the totals for the two years 211 and 125.

The cases pending on June 30 were, 501 civil against 513 at the beginning of the year, and 229 criminal against 343, or 730 as compared with 856.

Although a larger number of cases was filed than during the preceding year, the number pending at the end of the year was smaller than at the beginning. This is due to the fact that the number disposed of by the court during the fiscal year 1908 was larger than the number filed, 417 civil and 428 criminal cases having been disposed of, while 406 civil and 313 criminal cases were filed, or a total of 845 cases disposed of against 719 filed. Of those pending at the end of the year, 16 civil and 2 criminal cases were submitted, but not decided at the end of the term on March 31; 86 civil and 87 criminal cases

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were put on the calendar for July of the fiscal year 1909, and the remainder of 399 civil and 140 criminal cases had been docketed, but were not ready for hearing.

As a matter of fact, at the end of the term of the supreme court, only 430 civil and 132 criminal cases were pending, and 71 civil and 97 criminal cases were filed during the vacation of the court. Of the criminal cases pending which had not been heard by the court at the end of the term, 31 had been filed only six months before. The delay in these cases was due to the special circumstances of each case which resulted in the granting of an extension of time for the preparation and filing of the briefs by request of the counsels for the defendants. Of the civil cases, 274 had been filed six months before. The control of the proceedings in these cases is in the hands of the attorneys who, by agreement or otherwise, allowed the same to remain on the docket, without moving them to a hearing. However, none of them has been there long enough to be stricken off, except on motion to that effect by one of the parties.

Volumes 7, 8, and 9 of the reports of the supreme court, in English and in Spanish, containing the decisions of the court from December 23, 1906, to January 22, 1908, were published during the year, and volume 10, containing the decisions rendered up to the end of the last term of the fiscal year 1908, is almost completed.

COURT OF FIRST INSTANCE OF MANILA.

On July 1, 1907, civil cases to the number of 1,003, of which 560 were probate cases, were pending in the court of first instance of Manila. During the year, 685 civil cases were filed, not counting probate cases, which numbered 163. Of these, 356 were decided and 180 dismissed, leaving 1,315 civil cases pending at the end of the year. Of criminal cases, 59 were pending on July 1, 1907. During the year, 674 were filed, 477 decided, and 145 dismissed, leaving 111 pending at the end thereof. At the beginning of the year, 79 customs appeal cases were pending, 41 were filed during the year, 95 were decided, and 4 dismissed, leaving 18 cases pending on June 30, 1908.

The cash receipts of the court of first instance of Manila during the year amounted to ₱30,283.38, as against ₱29,954.75 for last year.

A comparison of the foregoing figures with those of the report for last year shows that the court of first instance of Manila is now farther behind in the dispatch of its civil cases than it was last year. The number of cases pending at the end of the year was greater than at the beginning, it being 1,315 as against 1,003, although a smaller number of civil cases was filed than during 1907, to wit, 848 as compared with 923. This is due to the fact that only 536 civil cases were disposed of as against 655.

On the other hand, the state of the docket could not be more satisfactory with regard to the customs appeal cases. There were only 18 cases pending at the end of the year, as against 79 pending at the beginning. A greater number of cases was filed than during 1907, to wit, 41 against 30; on the other hand, a larger number of cases was disposed of, to wit, 102 against 16. Adding up the civil and customs appeal cases, the total of cases disposed of was 638, as compared with 671.

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The state of the docket is also satisfactory with regard to criminal cases. There were 111 cases at the end of the year as against 59 at the beginning of the same, and 622 cases were disposed of, as against 625 disposed of during the preceding year. When it is considered that 674 cases were filed, as against 559 in the preceding year, the larger number of cases pending at the end of the year is explained.

It must also be taken into account, in considering the delay in the court of first instance of Manila, that during the court vacation this year Judge Lobingier, instead of acting as judge of the court of first instance of Manila, was detailed for special work with the compilation committee.

The attorneys practicing in Manila have suggested the necessity of creating a new judgeship for the court of first instance of Manila, in view of the delay in dispatching civil cases. However, I do not think it really necessary to create the position now. I believe that the assignment of a judge at large to assist the Manila judges will be enough to enable the court to catch up in civil cases within a reasonable time. Judge Charles H. Smith was assigned for this purpose on July 7 last, and will stay until the court has its civil cases up to date.

COURTS OF FIRST INSTANCE IN DISTRICTS OTHER THAN MANILA.

I submit the following statement, showing the condition of the cases of the courts of first instance of the several districts:

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Reports from clerks of courts of first instance, outside Manila, for the fiscal year July 1, 1907, to June 30, 1908.

Location.	Civil cases.						Criminal cases.					Cash received (costs, fees, and fines, Philippine currency).
	Pending July 1, 1907.	Filed up to July 1, 1908.	Decided.	Dismissed.	Pending June 30, 1908, ordinary.	Probate.	Pending up to July 1, 1907.	Filed up to July 1, 1908.	Decided.	Dismissed.	Pending June 30, 1908.	
First district:												
Cagayan, Tuguegarao	75	46	9	16	96	.....	22	98	52	33	35	₱10,654.14
Isabela, Ilagan	67	29	12	29	32	22	2	60	34	28	.....	1,563.78
Second district:												
Ilocos Norte, Laoag	149	145	69	25	124	76	37	158	61	8	126	3,557.28
Ilocos Sur, Vigan	112	77	57	8	71	53	24	119	75	25	43	4,042.60
Mountain district:												
Benguet, Baguio	2	2	.....	1	2	1	1	16	8	5	4	204.70
Lepanto-Bontoc, Cervantes	8	7	2	3	5	5	.....	18	16	2	.....	160.00
Nueva Vizcaya, Bayombong	1	1	1	.....	.....	1	.....	13	7	.....	6	64.00
Union, San Fernando	149	78	79	43	86	19	48	161	94	38	77	1,626.36
Third district:												
Pangasinan, Lingayen	315	204	24	18	323	154	116	350	156	61	249	5,256.84
Zambales, Iba	40	21	16	1	34	20	4	18	15	5	2	436.59
Fourth district:												
Pampanga, San Fernando	75	164	39	24	89	87	24	86	59	22	29	1,999.53
Tarlac, Tarlac	51	78	30	23	53	18	13	94	77	27	3	3,484.88
Nueva Ecija, San Isidro	139	89	90	45	54	39	74	120	111	72	11	5,538.66
Fifth district:												
Bulacan, Malolos	133	94	44	19	150	14	78	64	58	34	50	3,285.82
Rizal, Pasig	105	76	43	31	99	8	52	133	84	47	54	2,021.22
Sixth district:												
Cavite, Cavite	54	71	29	22	40	4	3	94	77	12	8	1,959.21
Laguna, Santa Cruz	69	106	72	16	78	9	59	131	65	46	79	3,366.45
Bataan, Balanga	42	15	9	6	30	12	12	45	44	12	1	588.23
Seventh district:												
Tayabas, Lucena	19	77	22	15	31	28	10	152	61	50	51	2,843.40
Tayabas, Boac, Marinduque	14	21	15	9	9	2	1	15	4	6	6	437.82
Batangas, Batangas	62	56	31	9	38	40	28	155	120	13	50	4,593.07
Mindoro, Calapan	18	9	6	6	6	9	7	60	47	5	15	2,328.30

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Eighth district:												
Ambos Camarines, Nueva Caceres	150	143	78	39	92	84	48	170	100	20	98	4,228.68
Albay, Albay	58	208	139	41	83	3	21	132	107	9	37	13,852.87
Ninth district: Iloilo, Iloilo	261	242	96	74	107	226	31	212	180	46	17	4,990.95
Tenth district:												
Negros Occidental, Bacolod	105	132	112	45	61	19	103	220	162	93	68	3,707.40
Antique, San Jose	30	54	42	10	29	3	5	68	47	26	.....	1,354.41
Eleventh district:												
Cebu, Cebu	145	143	31	23	147	87	74	196	123	37	110	2,982.32
Negros Oriental, Dumaguete	15	35	8	7	32	3	2	92	39	13	42	457.53
Bohol, Tagbilaran	19	26	13	15	16	1	2	43	34	5	6	633.40
Twelfth district:												
Leyte, Tacloban	185	122	76	90	100	41	108	443	157	245	149	4,654.34
Samar, Catbalogan	48	49	25	19	45	8	12	65	50	11	16	696.26
Thirteenth district:												
Moro province, district of Lanao Iligan	8	2	5	.....	4	1	7	22	17	5	7	1,388.00
Moro province, district of Dapitan	1	13	9	3	1	1	11	43	11	27	16	566.40
Surigao, Surigao	28	12	13	3	10	14	5	80	40	38	7	1,102.09
Misamis, Cagayan	55	100	34	24	60	37	53	206	122	60	77	5,812.03
Fourteenth district:												
Moro Province, Zamboanga	14	61	18	41	10	6	16	81	44	29	24	972.59
Moro Province, district of Jolo, Jolo	2	7	3	1	4	1	6	62	34	18	16	510.75
Moro Province, district of Davao	3	24	.....	6	18	3	1	19	6	10	4	441.49
Moro Province, district of Cotabato	9	6	8	2	4	1	11	25	16	8	12	286.00
Moro Province, Tawi-Tawi Group, Bongao	.....	3	.....	.....	3	.....	1	3	1	.....	3	32.00
Fifteenth district:												
Capiz, Capiz	55	53	26	39	42	1	50	93	87	46	10	1,297.43
Romblon, Romblon	28	26	9	5	39	1	4	24	20	7	1	1,491.21
Masbate, Masbate	5	16	1	10	7	3	.....	11	7	.....	4	381.00
Palawan, Cuyo	5	6	10	.....	.....	1	2	1	3	.....	.....	166.90
Palawan, Puerta Princesa	.....	.....	.....	.....	.....	.....	6	7	4	6	3	24.00
Sorsogon, Sorsogon	63	95	35	45	44	34	4	38	40	.....	2	2,347.30
Total	2,991	3,044	1,520	911	2,404	1,200	1,198	4,516	2,776	1,310	1,628	115,390.31

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Taking the districts as a whole, it will be noted that 3,604 civil cases were pending at the end, as against 2,991 at the beginning of the year, and 1,628 criminal cases, as against 1,198. During the year 1907, 2,557 civil and 3,340 criminal cases were filed, as against 3,044 civil and 4,516 criminal cases during the year 1908, or an increase of 487 and 1,176 cases, respectively. During the fiscal year 1907, 1,316 civil cases were decided and 807 dismissed, a total of 2,123 cases, and during the fiscal year 1908, 1,520 civil cases were decided and 911 dismissed, a total of 2,431 cases. During the year 1907, 2,393 criminal cases were decided and 1,020 dismissed, a total of 3,413; on the other hand, during the year 1908, 2,776 criminal cases were decided and 1,310 dismissed, a total of 4,086. During the year the courts disposed of 308 civil and 673 criminal cases more than during the preceding year. The increase in the number of civil and criminal cases pending at the end of the fiscal year, compared with those pending at the beginning of the same, is not due to any cause other than that during the year a larger number of civil and criminal cases was entered.

The fees, fines, and court costs collected amounted to ₱115,390.31, as against ₱181,654.72 for the preceding fiscal year. This decrease in the receipts is due to the fact that in former fiscal years the clerks of the courts collected large sums from the provinces for fees in criminal actions, which have now been practically abolished by Act No. 1764, which went into effect on October 11, 1907. Including the receipts of the court of first instance of Manila, the total sum collected by the courts of first instance was ₱145,673.69, as against ₱211,609.47 during the preceding year.

Changes.—On August 6, 1907, the Hon. Henry C. Bates, judge of the ninth judicial district, resigned and returned to the United States. The vacancy thus caused was filled by the transfer of the Hon. William F. Norris from the twelfth to the ninth district, and the Hon. James Ross, one of the judges at large, was appointed judge of the twelfth judicial district. The vacancy caused by the appointment of the Hon. James Ross as judge of the twelfth district was filled by the appointment of the Hon. Juan Sumulong, one of the prominent members of the bar of these islands, as judge at large. The Hon. Newton W. Gilbert, one of the judges at large, was appointed member of the Philippine Commission on July 1, of this year, and the vacancy caused by this appointment was filled on July 9 by the appointment as judge at large of the Hon. Isidro Paredes, then assistant attorney in the office of the attorney-general. The vacancy caused by the promotion to attorney-general of the Hon. Ignacio Villamor, judge of the sixth judicial district, was filled by the transfer of the Hon. Vicente Jocson from the tenth to the sixth district. The Hon. Albert E. McCabe, judge of the first judicial district, was appointed to the tenth district, and the Hon. Richard Campbell, attorney of the Moro Province, was appointed judge of the first district. The appointments of the three judges last named were made on August 31 of this year.

COURT OF LAND REGISTRATION.

At the end of the fiscal year 1908, 1,516 cases were pending in the court of land registration, as against 1,443 at the beginning thereof.

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There were filed 901 applications, as against 1,059 during the preceding year. In the 828 cases disposed of by the court of land registration, title was granted in 768 and denied in 29, the remaining 31 being dismissed. In the 768 cases where an order for registration was issued, the title was finally granted in 708 cases, and the others remained pending appeal. As to the cases dismissed the decree is final in 17 cases and is pending appeal in the others. During the year 1907, 223 applications were filed.

It will be seen that during the year the number of cases disposed of was over three times that of the preceding year, owing to the assistance rendered by the courts of first instance, which relieved the court of land registration from taking the evidence in nearly 400 cases, coming from various provinces, which had been prepared and sent to the said courts of first instance for this purpose, in accordance with the provisions of Act No. 1648, as amended.

The applications filed during the year 1908 were distributed among the various provinces as follows:

Albay	11	Mindoro	7
Antique	0	Misamis	0
Ambos Camarines	1	Moro	30
Agusan	0	Negros Occidental	57
Bataan	3	Negros Oriental	0
Batangas	12	Nueva Ecija	45
Benguet	4	Nueva Vizcaya	0
Bulacan	76	Pampanga	26
Bohol	57	Pangasinan	23
Cagayan	8	Palawan	0
Capiz	6	Rizal	48
Cavite	7	Samar	10
Cebú	41	Sorsogon	7
Ilocos Norte	9	Surigao	3
Ilocos Sur	2	Tarlac	23
Iloilo	18	Tayabas	43
Isabela	10	Union	0
Laguna	48	Zambales	5
Lepanto Bontoc	0		
Leyte	35	Total	901
Manila	226		

The total value of the property represented by the applications mentioned amounts to over ₱11,000,000. The total number of cases filed from the organization of the court until July 1 of this year is 4,427, the total value represented by said applications being approximately ₱51,000,000. During the fiscal year covered by this report the court held 427 sessions in Manila and 272 in the provinces, a total of 699 sessions.

During the entire fiscal year the judges at large, the Hon. Mariano Cuí and the Hon. Juan Sumulong, were almost constantly on duty with the court of land registration. Although the result of their assistance was that the number of cases disposed of was much greater than that of 1907, yet it is found that 4 judges (the two of the court of land registration and the two judges at large assigned for duty with said court) are not sufficient to keep it up to date in the disposition of cases, though the number filed was smaller than that of the preceding year. Considering this circumstance and the desire of the

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government to provide facilities for the registration of titles to real estate in these islands, in order that owners, if they so desire, may take advantage of the benefits of the Agricultural Bank, Act No. 1875 was passed, by which the governor-general is authorized to appoint 3 additional judges for the court of land registration. This act also provided that the fees prescribed to be paid by section 114 of Act No. 496, as amended, save the fees of the sheriff and the register of deeds, be suspended for the fiscal year ending June 30, 1909.

Act No. 1699 provides that provincial fiscals and the attorney of the Moro Province shall perform the duties of register of deeds in their respective provinces, and abolishes the position of examiner of titles. By virtue of this act, the duties of register of deeds are performed by provincial fiscals, except in the city of Manila, for which a register of deeds is appointed, and in the provinces of Benguet, Nueva Vizcaya, Lepanto-Bontoc, Zambales, Palawan, and Agusan, where the duties of the register of deeds are performed by the respective provincial treasurers, for the reason that there are no provincial fiscals residing therein. Prior to the passage of this act the duties of the register of deeds were performed in nearly all the provinces by the provincial treasurers; but this was very far from being satisfactory, for the reason that the provincial treasurers have not the legal knowledge necessary for the proper performance of the duties of register of deeds.

The following is a statement, by provinces, of the area of land registered since the organization of the court of land registration:

	Hectares.
Albay	280.2029
Agusan	
Ambos Camarines	231.4494
Antique	1.5933
Bataan	95.1947
Batangas	28,748.6020
Benguet	32.5568
Bulacan	2,587.5382
Bohol	70.6321
Cagayan	4,039.4847
Cavite	193.3417
Cebu	1,136.5193
Capiz	
Ilocos Norte	7.8350
Ilocos Sur	0.1475
Iloilo	1,075.7470
Isabela de Luzon	2,575.7470
Laguna	139.5502
Lepanto-Bontoc	
Leyte	92,1555
Manila	823.0343
Mindoro	23,060.7660
Misamis	0.2426
Moro	389.7133
Negros Occidental	24,687.6624
Negros Oriental	0.1678
Nueva Ecija	13,491.0142
Nueva Vizcaya	
Pampanga	5,923.0180
Pangasinan	3,946.7327

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	Hectares.
Palawan	
Rizal	15,667.0136
Samar	7.1885
Sorsogon	1,449.9810
Surigao	0.6395
Tarlac	3,527.4683
Tayabas	245.5939
Union	42.3616
Zambales	393.7805
Total	135,018.5207

JUSTICES OF THE PEACE.

Section 77 of Act No. 136 provides that justices of the peace shall, on or before February 1 of each year, make to the attorney-general, upon forms to be prescribed by him, a full report concerning the business done in their courts for the year previous. This provision was amended by section 2 of Act No. 1627, which provides that each justice of the peace shall, on or before December 1 of each year, forward to the district judge a report showing the number of suits begun in the court of said justice during the current year, the nature thereof, whether civil or criminal, the mode of disposition, whether by voluntary dismissal or judgment, the number still pending, the amount of costs and fees collected and for what service, and the number of marriages solemnized. Such report is required to be filed in the office of the clerk of the court of first instance, and said judge, with the assistance of said clerk, is required to embody a summary of such reports for each province of his district, together with other matters of interest and importance relative to the administration of justice therein, particularly with reference to justice of the peace courts, in a brief report, to be forwarded by the close of each calendar year to the secretary of finance and justice.

It will be noticed that the act provides that the report shall be for the business of the current year, which doubtless means the calendar year.

The summary provided by section 2 of Act No. 1627 has been submitted only by the judges of the courts of first instance of the second, fifth, sixth, twelfth, and fifteenth districts. The latter has not forwarded a report relative to the business of the justice of the peace courts of the provinces of Sorsogon and Palawan. The clerks of the courts of first instance of La Union, Zambales, and Mindoro have forwarded reports relative to the business of the justice of the peace courts in said provinces.

I do not believe it of utility for statistical and comparative purposes to make a summary of the partial reports submitted; in the first place, because it would not include all the justice of the peace courts of the Archipelago; and, in the second, because the reports submitted do not cover the same period of time, some covering the entire year 1907, others the period beginning on January 1 and ending on November 30 of the said year, and others only the first ten months of the year. Furthermore, it appears from the reports submitted that there

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has been no uniformity in the classification of the cases in the reports of the justices of the peace, and that the data relative to the number of cases, as contained in said reports, are not exact, because at times the totals given are found incorrect if one adds together the numbers of cases of each class. This is not strange if one takes into consideration that the reports were not made on the same form and that the justices of the peace were not given concrete instructions with regard to the manner of classifying the cases in their reports.

I believe that the law should be amended by providing that the justices of the peace shall forward their reports for the previous fiscal year to the courts of first instance on or before July 5 of each year, and that the judge of first instance shall, on or before July 31 of each year, forward to the secretary of finance and justice the report referred to in section 2 of Act No. 1627.

BUREAU OF JUSTICE.

OFFICE OF THE ATTORNEY-GENERAL.

General work of the office.—During the year the office of the attorney-general has furnished 301 opinions to the chief executive, the heads of the four departments, chiefs of bureaus, and other officials, has filed briefs and arguments in 262 cases in the supreme court, and has appeared before said court in 84 other cases by motions, etc. It appeared in 132 cases in the court of land registration and filed objections to registration, and examined 301 cases without doing so. It conducted several important cases in the courts of first instance in the provinces, principally those of prosecutions of public officers for embezzlement, in customs cases, both those regarding classification of merchandise and those relative to immigration, and internal-revenue cases tried in the court of first instance of Manila.

Changes.—There have been but few changes in the bureau of justice. The Hon. Ignacio Villamor, judge of the sixth judicial district, was promoted on July 9 last to attorney-general in the place of the writer, who on July 1 of this year was appointed commissioner and secretary of finance and justice. The office of the solicitor-general that was left vacant since 1906 upon the promotion to attorney-general of the writer, then solicitor-general, was filled on July 9, 1908, by promoting the assistant attorney-general, Mr. George R. Harvey, to solicitor-general. To take the place of the assistant attorney of the bureau of justice, Mr. Isidro Paredes, who was appointed judge at large on July 9 of this year, Mr. Diego Gloria, assistant prosecuting attorney of the city of Manila, was transferred from that office to said bureau; and to fill an existing vacancy, Mr. Rafael Corpus was appointed on October 1, 1907, assistant attorney of the bureau of justice.

Administration of the estates of deceased American employees.—During the year the attorney-general took charge of the administration of the estates of 24 American public employees. The total sum received during the year on account of said estates was ₱17,974.26, and the total sum disbursed for expenses of administration

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and outstanding obligations of the deceased, and payments to the relatives of balances of the estates, was ₱21,881.76. The balance in favor of the unliquidated estates was, on June 30 of this year, ₱6,114.11.

PROVINCIAL FISCALS.

On August 31, 1907, Act No. 1701, entitled "An act to equalize and secure uniformity in salaries of provincial fiscals, to empower the governor-general to consolidate the office of fiscals of two or more provinces, to declare vacant the position of fiscal of any province and assign the duties thereof to the office of the attorney-general, and to restore the status existing prior to such consolidation or abolition, and for other purposes," was passed. This act modifies the salaries of the provincial fiscals, establishing a maximum and minimum salary, in accordance with the importance of the respective provinces. They were classified to secure equality and uniformity in the salaries of provincial governors and treasurers. By this amendment the provincial fiscals received an increase of salary, which has to a certain extent compensated them for the increased work and responsibility imposed upon them by Act No. 1699, providing that they shall perform the duties of the register of deeds in their respective provinces.

The executive order of the governor-general of the Philippine Islands of October 31, 1907, fixed the salaries of the provincial fiscals of the provinces hereinafter mentioned as follows: Iloilo, ₱5,000; Cebu, ₱4,500; Pangasinan, ₱4,500; Leyte, ₱4,500; Albay, ₱4,000; Ambos Camarines, ₱4,000; Bulacan, ₱4,000; Ilocos Sur, ₱4,000; La Laguna, ₱4,000; Occidental Negros, ₱4,000; Pampanga, ₱4,000; Tayabas, ₱4,000; Rizal, ₱4,000; Samar, ₱4,000; Sorsogon, ₱4,000; Bohol, ₱3,500; Capiz, ₱3,500; Ilocos Norte, ₱3,000; La Union, ₱3,000; Oriental Negros, ₱3,000; Antique, ₱3,000, all to be effective as of October 1, 1907.

By executive orders of the governor-general, Nos. 44, 45, 46, 47, and 48, all dated October 31, 1907, the offices of the provincial fiscals of the provinces of Tarlac and Nueva Ecija, Cavite and Bataan, Batangas and Mindoro, Misamis, Surigao and Agusan, and Cagayan and Isabela were consolidated. These offices were already consolidated by virtue of acts prior to Act No. 1701, which were repealed by the latter, and for this reason it was necessary to issue the executive orders mentioned, for the purpose of a new consolidation, as prescribed in section 3 of said Act No. 1701. The only modification was the consolidation of the offices of the provincial fiscals of Bataan and Cavite, instead of Bataan and Bulacan, this change being due to the greater advantage of the fusion of the fiscals' offices of Bataan and Cavite, compared with that of the offices of Bataan and Bulacan, as the two provinces first mentioned belong to the same district, while Bulacan belongs to another, and it had happened that the sessions of the courts of first instance of Bataan and of Bulacan coincided, and that the fiscal was not able to perform his duties in both courts at the same time. Before the passage of Act No. 1701, the fiscals' offices of Surigao and Misamis were already consolidated, but in view of the

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dismembering of those provinces for the organization of the province of Agusan, the offices of the provincial fiscals of these three provinces were consolidated.

By executive order of the governor-general, No. 49, the position of provincial fiscal of the province of Zambales was declared vacated, and it was directed that the duties imposed by law upon the provincial fiscal of said province should be performed by an assistant attorney of the bureau of justice, to be designated by the attorney-general. The positions of provincial fiscal of the provinces of Palawan and of the Mountain district are also vacant, and the duties imposed by the law upon the fiscals of said provinces are being performed by an assistant attorney of the bureau of justice, designated by the attorney-general.

Changes.—On October 1, 1907, Mr. Sofio Alandi was appointed fiscal of Batangas and Mindoro, vice Mr. Diego Gloria, who was transferred to the office of the prosecuting attorney of the city of Manila as assistant prosecuting attorney. The position of provincial fiscal of Iloilo, vacated by the resignation of Mr. Ruperto Montinola, was filled on November 1, 1907, by the appointment of Mr. Juan de Leon, the present fiscal. In view of the resignation of the provincial fiscal of Ilocos Norte, Mr. Policarpo Soriano, who declared himself a candidate for governor, Mr. Pedro Valdes, then clerk of the court of first instance of said province, was appointed in his stead on November 15, 1907. In the place of Mr. Eugenio Arnedo, who resigned from the position of provincial fiscal of Rizal, Mr. Higinio Benitez, who has been provincial fiscal of La Laguna, was appointed on November 15, 1907. In lieu of the attorney for the Moro Province, Mr. Richard Campbell, who was promoted to judge of first instance of the first judicial district, his assistant, Mr. William M. Connor, was appointed on September 1, 1908.

For further information and more complete details as to the operations of the judiciary and bureau of justice, reference is hereby made to the report of the attorney-general, which is hereto attached, made part of this report, and marked "Exhibit No. 1."

BUREAU OF THE TREASURY.

EXPENSE OF CONDUCTING THE BUREAU.

The expense of conducting the bureau of the insular treasury amounted to ₱127,801.81, of which ₱110,518.76 was paid for salaries and wages, ₱41.66 for such items for previous fiscal years and paid during the fiscal year 1908, ₱16,871.62 for contingent expenses, and ₱369.77 for such expense for prior fiscal years and paid during the fiscal year 1908.

EARNINGS OF THE BUREAU.

During the fiscal year the insular treasurer received ₱341,612.23 for premiums on sale of demand drafts and telegraphic transfers in Manila on New York and in New York on Manila and from sale of

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interisland transfers, under Act No. 1636, all of which was credited to the gold-standard fund. The foregoing amount shows an increase over the fiscal year 1907 of ₱225,209.11. The amounts collected as interest on funds deposited in open account and on fixed deposit with authorized depositaries in the United States aggregated the sum of ₱913,096.54. The amounts collected as interest on fixed deposits in banks in Manila were credited to the trust funds to which said deposits pertained. It will be noticed that all of the special deposits in Manila banks, except ₱500,000, on which no interest was collected during the fiscal year 1908, are trust funds.

The following statement shows the cash balance in the hands of the insular treasurer at the close of the fiscal year 1908, the receipts and withdrawals and currency exchanged during the fiscal year 1908:

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Statement of cash operations of the insular treasury during the fiscal year 1908.

	Philippine currency.		Local currency.	
GENERAL FUNDS.				
Balance on hand at close of business, June 30, 1907		₱20,613,747.875	Pfs. 65,910.09	
Receipts during the fiscal year on account of—				
Customs	₱17,379,717.68			
Internal revenue	6,386,403.94			
Miscellaneous	19,078,634.71			
City of Manila	2,518,699.00			
City of Manila (internal-revenue account)	14,049.75			
Repayments	10,105,809.51			
Exchanges of currency	59,413,918.30		10,442.46	
		114,897,232.89		Pfs. 76,352.55
Total to July 1, 1908		135,510,980.765		
Withdrawals during the fiscal year, account of—				
Warrants paid	19,707,930.05			
Check vouchers paid	36,971,461.015		11,474.59	
Currency exchanges	59,382,850.17		64,877.96	
		116,062,241.235		76,352.55
Balance on hand at close of business, June 30, 1908		19,448,739.53		
DEPOSITARY ACCOUNT.				
Balance on hand at close of business, June 30, 1907	7,912,526.00			
Deposits during fiscal year	107,912,983.02			
Total	115,825,509.02			
Withdrawals during fiscal year	109,815,268.69			
Balance on hand at close of business, June 30, 1908		6,010,240.33		
CERTIFICATE REDEMPTION FUND.				
Balance on hand in fund at close of business, June 30, 1907	21,540,708.00			
Certificates issued during the year ₱8,634,000.00				
Certificates retired during the year 11,291,099.00				
Net amount retired during the year	2,657,009.00			
Balance on hand in fund at close of business, June 30, 1908		18,883,699.00		
Total funds in hands of insular treasurer at close of business, June 30, 1908		44,342,678.86		

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This balance was distributed as follows:

	United States currency.	Philippine currency.			
In treasury vaults	$5,418,736.77	₱13,576,382.26			
Certified checks on local banks		388,327.53			
In authorized depositaries in the United States	1,394,222.08				
Deposits in local banks		964,179.60			
Special deposits in local banks		2,817,996.11			
Special deposits with authorized depositaries in the United States	6,484,927.83				
	13,297,896.68	17,746,885.50		44,342,678.86	

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The special deposits referred to are funds deposited with depositaries at interest for fixed periods of time, and were as follows:

IN MANILA BANKS.

Postal savings bank funds	₱620,000.00
Rizal Monument fund	111,773.89
Franchise deposits	33,000.00
Fidelity deposits	178,369.31
Constabulary pension and retirement fund	83,000.00
Assurance fund, Act No. 496	27,000.00
Conservatory of Music fund	1,007.91
Arrastre fund	77,625.00
Fidelity bond premium fund	145,000.00
Insurance fund	125,000.00
Gold-standard fund	800,000.00
General fund	500,000.00
Manila sewer and water bonds, sinking fund	116,220.00
Total	2,817,996.11

IN BANKS IN THE UNITED STATES.

Gold-standard fund	$2,306,727.52
General fund	4,034,511.36
Sinking fund for friar lands bonds	101,752.04
Sinking fund for Manila sewer and water bonds	41,936.91
Total	6,484,927.83

TRUST FUNDS.

The following trust funds are held by the insular treasurer:

Rizal Monument fund (Act No. 243).
Assurance fund (Act No. 496).
Sinking fund, Manila sewer and water bonds (Act No. 1323).
Postal savings-bank fund (Act No. 1493).
Philippine Constabulary pension and retirement fund (Act No. 1638).
Insurance fund (Act No. 1728).
Sinking fund, public works, and permanent improvements bonds (Act No. 1729).
Fidelity bond premium fund (Act No. 1739).
Sinking fund, friar lands bonds (Act No. 1749).

The insular treasurer is charged with the special deposit of these trust funds, which are included among those in the above list, in banks in Manila and in the United States.

The money belonging to these trust funds in the hands of the insular treasurer uninvested at the close of the fiscal year 1908, amounted to ₱244,083.46 Philippine currency.

CERTIFICATES OF INDEBTEDNESS.

The last series of certificates of indebtedness issued on September 1, 1906, was paid off on September 1, 1907, from the gold-standard fund. Such payment leaves the gold-standard fund free of indebtedness, and including balance due from the United States mint at San Francisco on account of old coin forwarded for recoinage, with a net balance of ₱16,100,000 Philippine currency.

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BOND ISSUES.

No bonds have been issued during the fiscal year 1908 by the insular government or by the city of Manila.

BANKS AND BANKING.

PHILIPPINE POSTAL SAVINGS BANK.

The Philippine Postal Savings Bank has its head office in Manila and branch offices in the provinces. During the fiscal year 1908 there were 245 offices in operation, which, as compared with the number for the preceding fiscal year, shows a net increase of 12. These offices are classified as follows: First-class, 12, an increase of 3; second-class, 106, an increase of 25; third-class, 127, a decrease of 16.

The decrease in the number of third-class offices is due to the fact that some of them were advanced to second-class during the fiscal year, as third-class offices are only authorized by law to receive deposits in the form of postal savings bank stamps.

The total amount of savings deposits at the close of the fiscal year ended June 30, 1908, was ₱1,031,994.04, an increase over the preceding fiscal year of ₱522,530.77, or slightly over 100 per cent. The number of savings accounts with the bank was 5,389, an increase over the preceding fiscal year of 3,058, or 131 per cent, and the average amount of each deposit was about ₱190.

AGRICULTURAL BANK OF THE PHILIPPINE GOVERNMENT.

It will be remembered that on March 4, 1907, an act to provide for the establishment of an agricultural bank in the Philippine Islands was enacted by Congress.

By the provisions thereof, for the purpose of aiding in the establishment and operation of an agricultural bank in these islands, the Philippine government was empowered to guarantee an income of not exceeding 4 per cent per annum upon cash capital actually invested by individuals or corporations in such a bank.

At the time of the submission of the report for the fiscal year 1907, there was no prospect of the establishment of an agricultural bank by private individuals, in spite of the advantage offered by the above-mentioned act of Congress. In view of this fact the insular treasurer in his report for the year 1907 recommended that if no applications for the establishment of such a bank were received within a reasonable time the Philippine Legislature appropriate ₱1,000,000 of the general fund of the government for the founding of a governmental agricultural bank to be operated under the control of the insular treasurer, and the secretary of finance and justice in his report favored the recommendation, stating that in his opinion the experiment was well worth the trial.

No application having been presented by any corporation or private individual to establish a bank under the terms prescribed by the above-mentioned act of Congress, the Philippine Legislature on June 13, 1908, passed Act No. 1865, creating a bank to be known as the "Agricultural Bank of the Philippine Government." The sum of

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₱1,000,000 was appropriated as and for the capital of the bank. The administration thereof has been put into the hands of a board of directors, composed of the secretary of finance and justice (ex officio president of the board), the insular treasurer, and 3 citizens of the Philippine Islands or of the United States residing in the Philippine Islands, the insular treasurer being the manager.

It is authorized to receive deposits of funds of provinces, municipalities, the postal savings bank, societies, corporations, and private persons, and to pay interest on such deposits at a rate not to exceed 4 per cent per annum.

The by-laws of the bank fix the rate of interest on time deposits for six months at 2½ per cent per annum and for one year or more at 3½ per cent per annum. It is authorized to make loans only for payment of satisfaction of incumbrances on agricultural lands, for the construction of drainage and irrigation works, and for the purchase of fertilizers, agricultural seeds, machinery, implements, and animals, to be used exclusively by the borrower for agricultural purposes, and no loan can be made to any person or corporation not engaged in agricultural pursuits.

No loan can be made except upon resolution of the board of directors. No person or corporation can be permitted to borrow less than ₱50 nor more than ₱25,000; provided, however, that 50 per centum of the capital of said bank shall be set apart for loans of not more than ₱5,000 to any one person or corporation.

The by-laws provide that loans of ₱10,000 or more, but less than ₱20,000, shall require the affirmative vote or subsequent approval of the resolution of 4 members of the board of directors. For loans of more than ₱20,000 the affirmative vote or subsequent approval by resolution of all members of the board is necessary.

The law provides that no loan can be made except upon the security of a first mortage on unencumbered improved urban property or upon unencumbered agricultural land, not to exceed 40 per cent of the value thereof; or upon the security of a chattel mortgage to the bank on crops already harvested, gathered, and stored, not to exceed 40 per cent of the market value thereof on the date of the loan. The mortgagor is required to insure for the benefit of the bank all buildings of strong material on the property or the crops mortgaged. The period of the loans can not exceed ten years, and the rate of interest charged can not exceed 10 per cent per annum.

The by-laws have fixed the rate at the maximum allowed by the law.

The insular treasurer is authorized, with the approval of the governor-general, to constitute provincial and municipal treasurers agents of the bank, and the by-laws provide that in such cases they may be empowered by resolution of the board to receive deposits for the bank, either on time or in open account.

The bank may be conducted with the actual force of the bureau of the treasury with the assistance of the provincial and municipal treasurers, and for that reason the only personnel provided for in the by-laws is a secretary to keep the minutes of the meetings of the board of directors and to have the custody of the records of and the seal of the bank. He is required also to perform such other duties as may be prescribed by the manager of the bank.

The bank was declared open on October 1, 1908.

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PRIVATE BANKS IN OPERATION.

During the fiscal year 1908 the following banking institutions were examined by deputies of the insular treasurer:

Hongkong and Shanghai Banking Corporation, Manila, P. I.
Subagency, Iloilo, P. I.
Chartered Bank of India, Australia, and China, Manila, P. I.
Subagency, Cebu, P. I.
International Banking Corporation, Manila, P. I.
Subagency, Cebu, P. I.
Banco Español-Filipino, Manila, P. I.
Subagency, Iloilo, P. I.
Monte de Piedad y Caja de Ahorros, Manila, P. I.
Manila Building and Loan Association, Manila, P. I.

The following consolidated statement of the resources and liabilities of all the commercial banks in the Philippine Islands (Hongkong and Shanghai Banking Corporation, Banco Español-Filipino, Chartered Bank of India, Australia, and China, and International Banking Corporation) shows the condition of banking business during the fiscal years 1906–1908:

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	June 30, 1906.	June 30, 1907.	June 30, 1908.	Increase.	Decrease.
RESOURCES.					
Loans and discounts	₱8,009,638.14	₱7,788,673.26	₱8,258,735.85	₱470,062.59	
Overdrafts	10,319,791.02	10,869,079.63	11,536,128.65	667,049.02	
Stocks, securities, etc	151,801.47	98,642.67	825,618.72	726,976.05	
Banking house, furniture, and fixtures	153,735.23	109,681.46	168,320.26		₱1,361.20
Other real estate and mortgages owned	364,447.25	528,214.85	581,176.72	52,961.87	
Due from other banks	314,940.03	153,111.67	324,577.49	171,465.82	
Due from head office and branches	3,878,336.91	3,031,296.22	4,619,379.63	1,588,083.41	
Due from agents and correspondents	318,062.26	654,730.81	615,327.80		39,403.01
Bills of exchange	906,231.26	1,055,238.04	1,859,618.19	804,380.15	
Cash on hand	4,575,462.40	8,447,611.91	5,173,580.27		3,274,031.64
Checks and other cash items	118,738.93	119,800.94	112,518.54		7,282.40
Profit and loss account	72,178.09	51,835.80	12,967.34		38,868.46
Resources other than those above	1,520,016.97	1,136,798.04	820,478.39		316,319.65
Total	30,703,379.96	34,104,715.30	34,908,427.85	4,480,978.91	3,677,266.36
LIABILITIES.					
Capital stock	2,500,000.00	2,500,000.00	2,564,400.00	64,400.00	
Reserve fund	2,425,267.52	2,573,836.16	2,351,481.78		222,354.38
Undivided profits	1,502.11	275,596.20			275,596.20
Bank notes in circulation	1,500,000.00	1,459,265.00	1,565,295.00	106,030.00	
Due to other banks	314,940.03	184,070.33	324,577.49	140,507.16	
Due to head office and branches	9,467,444.38	9,079,617.76	6,930,157.67		2,149,460.09
Due to agents and correspondents	60,433.61	69,597.72	574,789.38	505,191.66	
Dividends due and unpaid	67,330.54	66,514.54	67,043.50	528.96	
Demand deposits	21,131.90	283,872.66	298,239.92	14,367.26	
Time deposits	3,679,975.74	6,078,759.94	8,568,823.13	2,490,063.19	
Savings deposits		566,596.04	541,078.51		25,517.53
Current accounts	9,310,374.67	10,252,513.06	9,990,304.05		262,209.01
Bills payable:					
Domestic	8,875.74	11,963.31	17,786.62	5,823.31	
Foreign	18,575.75,	15,340.74	16,701.42	1,360.68	
Cashier's checks outstanding	35,296.33	91,770.75	73,615.15		18,155.60
Certified checks	699,146.94	236,097.35	318,208.12	82,110.77	
Profit and loss account		12,695.10	9,043.67		3,651.43
Suspense account	204,098.83	280,835.81	431,937.38	151,101.57	
Liabilities other than those above	388,985.87	65,772.83	264,945.06	199,172.23	
Total	30,703,379.96	34,104,715.30	34,908,427.85	3,760,656.79	2,956,944.24

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BANKS IN LIQUIDATION AND CLOSED.

Bank of Pangasinan.—The liquidation of this bank by the insular treasurer, appointed receiver on January 6, 1906, was terminated by an order of the court, after an examination and approval of the account, on March 23, 1908. All creditors and the stockholders of the institution have been paid in full. The fee allowed to the receiver for his services, amounting to ₱1,023.29, was deposited in the insular treasury.

American Bank.—This bank was put into liquidation and the insular treasurer appointed receiver on May 18, 1905, and since that date the creditors of the institution have received 53 per cent of the amount of their claim. The receiver has now in his hands ₱4,156.39 Philippine currency. After deducting from this amount the cost of receivership and other expenses in connection therewith, estimated at ₱2,500, there remains only ₱1,656.39 available for the payment of claims amounting to ₱114,594.61, or less than 1½ per cent of the amount of the claims. It is expected that the receivership will be terminated before the end of the fiscal year 1909.

S. Misaka Bank.—This bank has been in process of liquidation since December 11, 1906. The insular treasurer, as receiver for the bank, met with great difficulty in collecting the bank's loans. In order to avoid the great expense for the receivership, which would amount to more than could be collected from the assets of the institution, the insular treasurer requested the court to allow the available assets of the bank to be disposed of at public auction, which request was granted, and the assets of the bank were sold by order of the court and ₱655.55 received therefor. The total amount the receiver now has on hand is ₱1,127.11, available for the payment of ₱12,101.32. It is expected that after deducting a small amount for cost of the receivership and other expense in connection therewith, estimated to be ₱250, the creditors will receive about 7 per cent of their claims.

Bank of Zamboanga.—This institution has been operating under the name above stated, but was not a banking institution in any sense of the word. It has discontinued doing business.

DRAFTS BETWEEN MANILA AND PROVINCES.

Act No. 1636, enacted April 30, 1907, authorized the sale of telegraphic transfers and demand drafts between Manila and the provinces and vice versa by the insular treasurer and all provincial treasurers. This act could not be put into operation until March of this year, owing to the fact that the preparation of a suitable code to be used for the purpose of transferring funds by telegraph required a greater amount of time and labor than was expected. The rate of premium charged for demand drafts was fixed at one-fourth of 1 per cent, and for telegraphic transfers one-fourth of one per cent, and in addition thereto cost of all telegrams in connection with the transfer. The means of transfer, as provided for by this law, of funds from Manila to the provinces and vice versa has resulted in great benefit in commercial transactions. It has reduced the expense for sending money from Manila to the provinces and vice versa and made it possible to send money to interior and remote provinces where heretofore the means of transportation were difficult.

Commercial firms and individuals quickly availed themselves of this way of transferring their funds between Manila and the prov-

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inces and vice versa. Between April 1 and June 30, 1908, the funds transferred by means of demand drafts and telegraphic transfers amounted to ₱234,502.45 Philippine currency to the provinces, on which premiums were collected amounting to ₱586.26; and during the same period the amount transferred from the provinces to Manila through provincial treasurers aggregated approximately ₱215,000, making the total amount transferred to and from the provinces during the three months of the operation of the system about ₱450,000, or an average of ₱150,000 per month. All premiums collected by the insular treasurer on demand drafts and telegraphic transfers are credited to the gold-standard fund. Those collected by the provincial treasurers are credited to the respective provinces as miscellaneous provincial revenue.

GOLD-STANDARD FUND.

There has been a remarkable increase in the operations of the gold-standard fund over the preceding fiscal year. The sale of exchange on New York has been the largest of any year since the gold-standard fund was created in 1903. The total amount of New York exchange sold was ₱27,798,197.10, including ₱1,275,350 sold to the bureaus of the insular government. The amount of telegraphic transfers and demand drafts sold to commercial firms and banking institutions only exceeds that for the previous fiscal year ₱18,766,661.56 Philippine currency, or 240 per cent.

The interest collected on balances of the gold-standard fund with depositaries in the United States amounted to ₱365,336.82 Philippine currency, an increase over the preceding fiscal year of ₱255,841.82, or nearly 200 per cent. All interest collected was credited to the fund.

The following is a summary of the operations of the gold-standard fund for the fiscal year ended June 30, 1908:

	Fund in Manila.		Fund in New York, United States currency.
	Philippine currency.	United States currency.	
DEBIT ITEMS.			
Balance June 30, 1907	[a b] ₱9,946,111.56	[a] $124,602.27	$5,363,418.96
New York exchange	26,522,847.10		
Government exchange	1,275,350.00		
Premium on New York exchange, commercial	279,844.22		
Premium on New York exchange, government	61,171.80		
Premium on interisland exchange	596.21		
Exchange with other funds		12,501.55	1,440,000.00
Sale of local currency	39,030.30		
New coin received from the United States	17,201,000.00		
Currency exchanges	5,576,037.88	13,100,291.31	
Redemption of Philippine currency in New York		4,805.50	
Exchange with Treasurer of the United States			11,000,000.00
Interest on deposits in United States			182,668.41
Sale of proof sets of Philippine coin			272.00
Sale of Igorot copper	70.95		
Sale of money boxes	217.90		
Seized funds, Acts Nos. 1411 and 1731	4,277.31		
Return of reward, resolution, Philippine Commission, July 3, 1906	29.82		
Proceeds of mutilated coin sent to United States	14.14		8,001.00
Certificate of deposit, Hongkong Bank	800,000.00		
Miscellaneous			96.00
Advances repaid	654.54		
Total	41,815,030.61	12,992,996.09	17,994,455.37

[a] Overdraft.

[b] Not including pfs. 65,910.09 legal currency, valued at ₱50,700.07, disposed of during fiscal year covered by this report.

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	Fund in Manila.		Fund in New York, United States currency.
	Philippine currency.	United States currency.	
CREDIT ITEMS.			
Exchange with Treasurer of the United States		₱11,000,000.00	
Shipped to San Francisco mint for recoinage	₱15,905,000.00		
Purchase of local currency	8,032.57		
Cablegrams	1,160.21		
Sixth series certificates of indebtedness			$1,000,000.00
Interest on same			10,000.00
Premium on telegraphic transfers for principal and interest on above	22,725.00		
Rewards, Act No. 1411	227.67		
To adjust difference on books of insular auditor and treasurer, Philippine Islands	4,164.60		
Special deposit with Hongkong Bank	800,000.00		
Sent to the United States for redemption		8,000.50	
New York exchange			13,844,003.55
New York exchange paid in Manila		95.00	
Miscellaneous		95.00	
Advance to insular disbursing officer	14,315.86		
Advance to A. T. Ruan, disbursing agent, Philippine revenues, Washington, D. C.			550,000.00
General purpose, gold-standard fund	24,564.86		
Exchange with other funds	[a] 3,015,003.10		
Exchange, currency	26,200,582.62	2,788,018.94	
Redemption of Philippine currency in United States			4,805.50
Copper coin sent for recoinage	37,827.00		
Balance June 30, 1908	[b] 4,218,572.88	[b] 803,213.35	2,585,646.32
	41,815,030.61	12,992,996.09	17,994,455.37

[a] ₱110,000 of this item is countercharge of like amount taken up in debit item, government exchange, and belonging to general fund.
[b] Overdraft.

Taking into consideration the balance shown by these tables and the fact that on June 30, 1908, the balance due from the United States mint at San Francisco on account of old coin forwarded for recoinage was ₱16,755,353.30, the net credit balance of the gold-standard fund was, at the end of the fiscal year, ₱16,101,646.36 Philippine currency.

SEIGNIORAGE.

In the report of this department for the fiscal year 1907 it was stated that the net seigniorage profits resulting to the government from the purchase of bullion for coinage and recoinage of Mexican and Spanish-Filipino currency amounted to ₱2,715,806.48. During the fiscal year 1908 the insular treasurer disposed of Pfs. 76,352.55 of the old local silver and copper coin, and 178 pounds of Igorot copper. Of the local currency disposed of, Pfs. 11,474.59 was sent to the United States mint at San Francisco for recoinage and will coin ₱15,578.16 in the Philippine coin of the new weight and fineness, resulting in a profit to the government of ₱6,751.55 Philippine currency. The remainder of local currency and Igorot copper was sold at a loss to the government of ₱10,876.09. Deducting from this amount the profit resulting from the recoinage of the local currency, the net loss to the government on local currency transactions during the fiscal year 1908 amounted to ₱4,124.54. Substracting this amount from the balance profit at the close of the fiscal year 1907, the net seigniorage profit is reduced to ₱2,711,681.94 Philippine currency at the end of the fiscal year 1908.

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RECOINAGE.

The withdrawal from circulation of the silver coin of the first issue commenced during the fiscal year 1908. During the preceding fiscal year such withdrawal could not be made, first, because only a very limited amount of new coin, ₱5,275,000, had been received by the treasurer from the mint, and second, because there was considerable opposition on the part of the people in the provinces to accepting the new coins.

This opposition continued with more or less force during the first four months of the fiscal year under consideration, but after that time gradually disappeared, and within six months after the new coin was placed in circulation it was accepted without question the same as the first issue in every part of the archipelago.

With the assistance of the provincial treasurers and banking institutions over ₱16,000,000 was withdrawn from circulation during the fiscal year 1908, and ₱15,905,000 of that amount was sent to the United States mint at San Francisco for recoinage. There was also returned to the mint the sum of ₱37,827 in copper coin. The insular treasurer received from the United States mint ₱17,201,000 of the new coin, of which ₱15,201,000 were proceeds of recoinage and ₱2,000,000 coined from bullion purchased.

CIRCULATION.

The following table shows the total circulation in the islands, with increase or decrease by months during the fiscal year 1908:

Date.	Amount in circulation.	Circulation increase (+) or decrease (−).
July 31, 1907	₱42,167,914.63	−₱646,400.12
August 31, 1907	41,018,008.47	−1,149,906.16
September 30, 1907	40,158,542.67	− 859,465.80
October 31, 1907	40,309,303.95	+ 150,761.28
November 30, 1907	40,547,339.535	+ 238,035.585
December 31, 1907	38,586,997.145	−1,960,342.39
January 31, 1908	38,104,952.045	− 482,045.10
February 29, 1908	38,743,244.015	+ 638,291.97
March 31, 1908	42,297,753.155	+3,554,509.14
April 30, 1908	41,994,632.255	− 303,120.90
May 31, 1908	42,134,676.76	+ 140,044.505
June 30, 1908	40,337,982.04	−1,796,694.72

The following table shows the total amount of Philippine silver and minor coins received from the United States mint, the amount returned for recoinage to June 30, 1908, the amount in the treasury vaults, and amount in circulation at the close of the fiscal year 1908:

Denomination.	Amount received from United States mints (old coin).	Amount received from United States mints (new coin).	Total amount received.
Pesos	₱26,994,635.00	₱18,476,000.00	₱45,470,635.00
50 centavos	3,055,221.00	2,151,000.00	5,206,221.00
20 centavos	1,595,744.40	1,046,000.00	2,641,744.40
10 centavos	1,133,681.40	803,000.00	1,936,681.40
5 centavos	499,250.00	.....	499,250.00
1 centavo	378,300.00	.....	378,300.00
½ centavo	88,670.00	.....	88,670.00
Total	33,745,501.80	22,476,000.00	56,221,501.80

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Denomination.	Amount returned for recoinage.	Amount in Treasury vaults.	Amount in circulation.
Pesos	₱20,834,000.00	₱10,770,420.00	₱13,866,215.00
50 centavos	1,955,500.00	748,712.00	2,502,009.00
20 centavos	652,600.00,	373,030.20	1,616,114.20
10 centavos	462,900.00	337,520.60	1,136,260.80
5 centavos	.....	232,758.10	266,491.90
1 centavo	1,399.00	5,210.93	371,690.07
½ centavo	36,428.00	10.93	52,231.07
Total	23,942,827.00	12,467,662.76	19,811,012.04

The following table shows denominations and amounts of Philippine silver certificates in treasury vaults and in circulation at the close of each quarter during this fiscal year:

Denomination and amount of Philippine silver certificates in circulation.

	September 30, 1907.		December 31, 1907.	
	In circulation.	In vaults.	In circulation.	In vaults.
2 pesos	₱2,174,024	₱1,760,000	₱2,282,024	₱4,652,000
5 pesos	1,952,025	3,740,000	1,952,025	3,740,000
10 pesos	7,883,940	7,650,000	6,883,940	8,650,000
20 pesos	3,770,160	2,200,000	4,310,160	1,660,000
50 pesos	387,550	3,610,000	402,550	3,595,000
100 pesos	319,300	3,680,000	299,300	3,700,000
500 pesos	1,398,500	1,600,000	648,500	2,350,000
	March 31, 1908.		June 30, 1908.	
2 pesos	₱2,606,024	₱4,328,000	₱2,221,404	₱5,712,620
5 pesos	2,242,025	3,450,000	1,980,925	3,711,100
10 pesos	6,933,940	8,600,000	6,195,540	9,338,400
20 pesos	4,890,160	1,080,000	5,069,180	900,980
50 pesos	437,550	3,560,000	542,150	3,455,400
100 pesos	319,300	3,680,000	526,500	3,472,800
500 pesos	1,848,500	1,150,000	2,348,000	3,650,500

There were received during the fiscal year from the Bureau of Engraving and Printing, Washington, D. C., Philippine certificates of the following denominations and amounts:

2 pesos	₱4,000,000
500 pesos	3,000,000

The following table shows denominations and amounts of bank notes received by the insular treasurer for issue to the Banco Español-Filipino, under article 28, section 1, of Act No. 1790, which the bank is authorized to issue under article 24 of section 1 of the above-cited act:

Denomination.	Amount received.	Issued to bank.	Balance in treasury vaults.
5 pesos	₱2,000,000	₱600,000	₱1,400,000
10 pesos	2,000,000	450,000	1,550,000
20 pesos	600,000	60,000	540,000
50 pesos	500,000	60,000	440,000
100 pesos	400,000	40,000	360,000
200 pesos	350,000	40,000	310,000
Total	5,850,000	1,250,000	4,600,000

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CERTIFICATES DESTROYED.

During the fiscal year 1908 mutilated and worn Philippine certificates of the following denominations and value were redeemed and destroyed:

Denomination.	Number.	Full value.	Half certificates.		Date of destruction.
			Number.	Value.	
2 pesos	167,789	₱335,578	6	₱6	Sept. 6, 1907
5 pesos	37,240	186,200	2	5	Do.
10 pesos	27,474	274,740	.....	.....	Do.
20 pesos	1,059	21,180	.....	.....	Do.
50 pesos	15	1,500	.....	.....	Do.
100 pesos	5	500	.....	.....	Do.
500 pesos	1	500	.....	.....	Do.
Total	.....	820,198	.....	11	

For further and more complete details of the transactions of the treasury bureau, attention is invited to the report of the insular treasurer, which is hereto annexed, made a part hereof, and marked "Exhibit No. 2."

BUREAU OF CUSTOMS.

Legislation Affecting the Customs Service.

Act No. 1684, passed August 14, 1907, and expressly made enforceable by the Insular Collector of Customs, prohibits the importation by private persons of silkworms, their eggs, or cocoons.

Act No. 1737, passed October 2, 1907, amends section 1 of Act No. 1411, entitled "An act for the purpose of maintaining the parity of the Philippine currency in accordance with the provisions of sections 1 and 6 of the act of Congress approved March 2, 1903, by prohibiting the exportation from the Philippine Islands of Philippine silver coins, and for other purposes." This act prohibits the exportation of any amount of the first series of Philippine silver coins and the exportation, except in sums of ₱25 or less in the personal baggage carried by passengers leaving the Philippine Islands, of any of the latter series.

Act No. 1751, passed October 7, 1907, provides "for the arrest and return to ship of seamen deserting from certain merchant vessels in the Philippine Islands; for the adjudication by consuls of certain disputes and for the enforcement of consular decisions in such cases; and for repealing Act No. 1439."

Act No. 1439 provides a method enabling consuls-general, consuls, or vice-consuls of any foreign government having a treaty with the United States, stipulating for the restoration of seamen deserting from the vessel of any such government while in any port of the Philippine Islands, to secure, by an order of the courts, the return of such deserting seamen to their vessels, but there is no provision relative to sailors or seamen deserting from an American vessel. Al-

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though section 84 of the act of Congress of July 1, 1902, vests the Philippine customs officers with certain consular powers relative to American seamen, and provides that the laws relating to seamen on foreign voyages shall be applicable to seamen on vessels going from the United States and its possessions to said islands, the customs officers there being for this purpose substituted for consular officers in foreign ports, yet under Act No. 1439 the customs officers could not exercise the consular powers with regard to American seamen. The necessity of legislation remedying this defect had already been shown in the report of the collector of customs for the year 1906. Act No. 1751 was passed for this purpose. This act contains the provisions of Act No. 1439, and considering the Philippine customs officers as American consular officers, grants them the same powers as those of the consular officers of a foreign government with which the United States has a treaty as above mentioned, authorizing them to apply to the courts for the arrest of seamen deserting from American vessels. The act mentioned also provides a method of enforcing, by summary judicial proceedings, any treaty between the United States and a foreign nation, which stipulates that the consuls-general, consuls, vice-consuls or consular or commercial agents of each nation shall have exclusive jurisdiction of controversies, difficulties, or disorders arising at sea or in the waters or ports of the other nation between the members or officers and any of the crew, or between any of the crew themselves, of any vessel belonging to the nation represented by such consular officer, and for the decision of such controversies, difficulties, or disorders arising in Philippine waters on American vessels. The same rights, privileges, and powers are conferred as those granted by this act to the consuls of a friendly nation with which the United States has a treaty as stated above.

Act No. 1760, passed October 10, 1907, is to prevent "the introduction into the Philippine Islands of dangerous communicable animal diseases, to prevent the spread of such diseases within the islands, and for other purposes." The bureau of customs assists in the enforcement thereof in so far as it relates to importations.

Act No. 1761, passed October 10, 1907, is "An act gradually to restrict and regulate the sale and use of opium pending the ultimate prohibition of the importation of opium into the Philippine Islands in whatever form except for medicinal purposes, as provided by the act of Congress approved March 3, 1905, and prohibiting any person from having the possession of opium, cocaine, or alpha or beta eucaine in any of their several forms, or any dirivative or preparation of any of such drugs or substance, except for medicinal purposes, and to repeal Act No. 1461, and for other purposes." This act is complementary to the Philippine tariff revision law, enacted by Congress March 3, 1905, which provides that after March 1, 1908, it shall be unlawful to import into the Philippine Islands opium, in whatever form, except by the Government, and for medicinal purposes only, and at no time shall it be lawful to sell opium to any native of the Philippine Islands except for medicinal purposes. This act also imposes great responsibility upon the bureau of customs to prevent the smuggling of opium.

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Act No. 1775, passed October 11, 1907, authorizes the insular collector of customs to clear foreign vessels for the ports of Legaspi and Tabaco.

Act No. 1777, passed October 11, 1907, authorizes the governor-general to close, by executive order, certain ports of entry, and to reopen the same in like manner when the public interests so require. The purpose of this act is to enable the governor-general to close the small ports created by section 10 of the Philippine customs administrative act, at the southern boundary of the archipelago, without the necessity of an act of the Philippine Legislature, and by executive order of the governor-general, when the public interests do not require these ports open, and to have said ports reopened when said interests do so require. Under this act the ports of Bongao, Sitanki, and Jurata were actually closed during the fiscal year 1908.

Act No. 1780, passed October 12, 1907, regulates the importation, acquisition, possession, use, and transfer of firearms, and prohibits the possession of the same except in compliance with the provisions thereof. This act, so far as it relates to the importation of firearms, is a complement to paragraph 1 of section 6 of the tariff revision law of 1905.

Act No. 1781, passed October 12, 1907, amends section 27 of Act No. 355, entitled "An act to constitute the customs service of the Philippine Archipelago, and to provide for the administration thereof," as amended, by restoring said section to the form prior to its amendment by Act No. 1235, and making dutiable all goods valued at more than $1, United States currency, instead of goods on which the duties are more than $1, United States currency.

Act No. 1782, passed October 12, 1907, provides for the establishment of manufacturing bonded warehouses where imported materials may be fabricated with Philippine products into articles for exportation and relieved from the payment of duties upon reexportation. The local manufacturers did not take advantage of the provisions of this act on account of the expense involved in building separate factories for exportation and for local consumption.

Act No. 1806, passed January 30, 1908, amends the Philippine customs administrative act, as amended, by providing that merchandise in bond may be withdrawn for delivery on board a vessel of the United States or a foreign vessel. It is substantially to the effect that the withdrawal of goods from a bonded warehouse for delivery on board a vessel of the United States or a foreign vessel for exportation shall be considered as exportation.

Act No. 1814, passed March 24, 1908, amends section 136 of Act No. 355, known as the Philippine customs administrative act, as amended by Act No. 1341, and authorizes the insular collector of customs. with the approval of the secretary of finance and justice, to regulate the manifesting of coastwise cargoes in certain particulars. It was passed to obviate the trouble caused to coasting vessels by the compulsory filing of complete manifests prior to their departure. Both passengers and cargo are received on board coastwise vessels up to the last moment, this act making it possible for the master to file a general manifest prior to sailing and detailed manifests afterwards.

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Act No. 1823, passed May 15, 1908, creates the entry port of Davao.

Act No. 1837, passed May 29, 1908, makes appropriations for certain public works and permanent improvements, and for other purposes. The sum of ₱200,000 was appropriated for the customs-house and arrastre system in the capital of Cebu.

Act No. 1844, passed June 1, 1908, amends section 301 of Act No. 355, known as "An act to constitute the customs service of the Philippine Archipelago and to provide for the administration thereof," as amended, by prohibiting the importation of merchandise into any port in the Philippine Islands other than an entry port, or in vessels of less than 30 tons burden. It rescinded the proviso in section 6 of Act No. 898, amending section 301 of the Philippine customs administrative act, that the importation of merchandise at the entry ports at Bongao, Jurata, Balabac on Balabac Island, and Sitanki may be made in vessels of Philippine construction of 5 or more tons burden, without subjecting said vessels to seizure and forfeiture. The object of this law is to stop smuggling from Borneo into Jolo customs districts ports carried on by small, swift-sailing vessels of from 5 to 15 tons burden, and to place the trade between Borneo and Celebes and the Moro Province upon the same footing as other foreign trade of the islands.

IMPORTS.

According to the data afforded by the customs records, based upon invoices submitted upon entry of each consignment, the total value of commercial importations was $30,918,745, and was distributed among the various countries in which the merchandise represented thereby originated, as follows:

Country of origin.	Value of merchandise received.	Percentage of total value.
United Kingdom	$6,109,586	19.7
French East Indies	5,746,414	18.5
United States	5,079,670	16.4
China	2,499,169	8.0
Australia	2,046,039	6.6
Germany	1,933,808	6.2
Spain	1,654,480	5.3
British East Indies	1,239,084	4.7
Japan	1,111,865	3.5
France	821,348	3.5
Switzerland	751,524	2.4
Hongkong	463,970	1.5
Belgium	342,365	1.1
Siam	307,507	1.0
All other imports	811,918	2.6
Total	30,918,745	100.00

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The following table gives a comparative summary of imports (gold and silver currency not included) into the Philippine Islands, by countries, during the four fiscal years ended June 30, 1908:

Countries.	1905.		1906.	
	Values.	Duties.	Values.	Duties.
United Kingdom	$4,848,393	$1,165,634	$5,224,020	$1,316,735
French East Indies	5,968,614	1,063,772	3,854,244	914,813
United States	5,761,660	1,105,677	4,333,917	804,441
China	2,942,331	571,230	2,650,320	463,556
British Australia	1,365,662	62,435	1,523,068	93,676
Germany	1,498,898	389,778	1,360,961	354,722
Spain	1,931,359	557,982	1,787,310	540,967
British East Indies	2,007,514	592,059	1,515,042	573,173
Japan	1,018,437	215,635	657,386	216,989
France	832,568	227,327	833,458	224,225
Switzerland	444,970	96,334	592,954	142,172
Hongkong	209,953	59,803	304,291	74,668
Belgium	299,155	58,043	259,521	61,856
Siam	902,566	154,653	.....	.....
Italy	152,802	44,923	197,865	60,176
Dutch East Indies	79,175	22,553	70,592	21,762
Netherlands	103,139	70,114	150,165	75,265
Austria-Hungary	94,343	27,734	88,788	24,546
Denmark	5,213	816	8,704	600
Persia	76,179	36,337	.....	.....
Quebec, Ontario, etc	20,344	11,624	9,367	4,986
British Columbia	1,100	606	464	46
Norway	6,900	825	.....	154
All other	307,773	129,036	375,853	95,038
Total	30,879,048	6,664,430	25,799,290	6,064,446

Countries.	1907.		1908.	
	Values.	Duties.	Values.	Duties.
United Kingdom	$6,645,575	$1,475,549	$6,109,586	$1,431,891
French East Indies	3,474,236	798,625	5,746,414	1,181,003
United States	5,664,002	1,070,821	5,079,670	999,044
China	2,759,715	413,369	2,499,169	394,024
British Australia	1,753,874	120,267	2,046,039	125,429
Germany	1,655,422	424,848	1,933,808	492,473
Spain	1,756,667	549,942	1,654,480	502,282
British East Indies	1,626,299	612,862	1,239,084	362,666
Japan	1,010,043	258,260	1,111,863	306,426
France	851,529	247,500	821,348	237,512
Switzerland	605,260	131,635	751,524	139,181
Hongkong	346,622	62,628	463,970	64,928
Belgium	293,055	72,492	342,365	90,233
Siam	208,126	40,214	302,507	64,359
Italy	258,855	77,093	249,489	75,347
Dutch East Indies	262,750	97,021	185,020	56,700
Netherlands	221,897	103,873	166,605	108,786
Austria-Hungary	170,534	45,691	123,942	31,258
Denmark	18,672	1,544	21,479	2,253
Persia	36,346	23,227	20,891	13,615
Quebec, Ontario, etc	13,366	6,806	13,234	6,125
British Columbia	11,354	1,680	8,168	1,189
Norway	1,697	201	6,173	509
All other	19,926	5,574	16,917	4,252
Total	29,665,822	6,641,722	30,918,745	6,691,485

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The relative rank of countries exporting goods to the Philippine Islands during the fiscal years 1905, 1906, 1907, and 1908 in excess of $1,000,000 is shown by the following table:

Country.	1905.	1906.	1907.	1908.
French East Indies	First	Third	Third	Second.
United States	Second	Second	Second	Third.
United Kingdom	Third	First	First	First.
China	Fourth	Fourth	Fourth	Fourth.
British East Indies	Fifth	Seventh	Eighth	Eighth.
Spain	Sixth	Fifth	Fifth	Seventh.
Germany	Seventh	Eighth	Seventh	Sixth.
Australia	Eighth	Sixth	Sixth	Fifth.
Japan	Ninth	Tenth	Ninth	Ninth.
France		Ninth		

The position of England at the head of the list is chiefly due to the large quantity of cotton goods in addition to the general merchandise received from that country. Importations from French East Indies consist almost entirely of the large amount of rice received from Saigon. It will be noted that French East Indies, having been at the head of the list in exportations to the Philippine Islands in 1905, fell to the third place in 1906 and remained there in 1907, and now is second in the list, which is due to the increase in importation of rice during the year 1908 from Saigon. Importations representing nearly all classes of commodities contributed to the value credited to the United States, while importations from China and Australia are largely represented by meats, vegetables, and other provisions purchased in the markets of those countries. Importations from other countries include numerous classes of merchandise.

The principal classes of merchandise imported into the Philippine Islands during the fiscal year 1908, and their proportion of the total value of imports, are as follows:

Merchandise imported.	Invoice value.	Percentage of total value of imports.
Cotton goods	$8,011,834	25.9
Rice	5,861,256	18.9
Manufactures of iron and steel	2,164,907	7.0
Provisions, including meat and dairy products	1,520,369	4.9
Cattle, live	1,055,236	3.4
Flour	1,044,570	3.3
Illuminating oil	806,112	2.6
Manufactures of leather	671,962	2.1
Manufactures of vegetable fibers	614,139	2.0
Chemicals, drugs, and dyes	568,916	1.8
Coal	567,220	1.8

The total value of imports (exclusive of currency, merchandise imported free of duty under the provisions of Act No. 1566, for railway construction and equipment, and supplies for the insular government and United States military and naval forces) amounted to $30,918,745, as compared with $28,786,063 during the fiscal year 1907, an increase of $2,132,682. This gain is chiefly due to increase in importations of food supplies, especially rice, which overbalances the general increase in nearly all other classes of commodities imported.

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The value of articles of first necessity, i. e., cotton goods, rice, meats, and dairy products, flour, etc., represents more than 50 per cent of the total value of imports during the year. That of cotton goods, $8,011,834, which constitutes 25.9 per cent of the total import value, was $404,412 less than in 1907, while that of rice, meat, dairy products, and flour imported amounted to $8,426,195, which represents 27 per cent of the total import value, and as compared with the value of such merchandise imported during the previous year shows an increase of $2,623,554. Of this amount, $2,198,763 is due to the value of rice, $155,296 to that of flour, and $269,295 to that of miscellaneous provisions. Rice importation aggregated in value $5,861,256, or 19 per cent of the total imports, which, as compared with the value of this article imported during the previous year, $3,662,493, shows an increase of $2,198,763; i. e., 43 per cent of the quantity imported during the previous year. The other chief imports were manufactures of iron and steel, aggregating $2,164,907 in value, or $380,085 less than during the previous year.

The quantity of rice imported into the Philippine Islands, and duty collected thereon, by fiscal years, 1899 to 1908, are represented by the following figures:

	Pounds.	Value.	Duty.
1899	128,725,790	$1,939,122	$374,602
1900	242,311,382	3,113,423	662,542
1901	392,932,908	5,490,958	1,128,694
1902	477,087,198	6,578,481	1,174,058
1903	677,238,885	10,061,323	1,535,593
1904	727,139,614	11,548,814	1,650,720
1905	563,285,346	7,456,738	1,311,496
1906	304,351,232	4,375,500	1,049,269
1907	248,568,399	3,662,493	845,701
1908	357,532,514	5,861,256	1,254,515
Total	4,119,173,268	60,088,108	10,987,280

In addition to the above commercial importations, 6,163,400 pounds of rice were entered free of duty on account of the insular government during 1908, bringing the total quantity received during that year to 363,695,914 pounds.

The following comparative table shows the total value of some principal groups of commodities (gold and silver currency not included) imported from the United States and from all other countries at all ports of the Philippine Islands, by fiscal years, 1901 to 1908, inclusive:

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Commodity and origin.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Cattle:								
United States				$550	$2,470			
All other countries	$73,840	$481,846	$728,818	834,010	770,342	$828,206	$1,058,824	$1,055,236
Breadstuffs, except flour:								
United States	19,243	20,920	21,248	36,571	78,709	52,410	63,633	94,717
All other countries	225,745	216,650	207,479	216,853	173,635	176,853	199,763	234,915
Flour:								
United States	356,193	642,672	686,291	833,056	613,987	446,076	370,271	507,235
All other countries	145,006	43,298	41,659	9,852	113,604	377,958	518,903	537,335
Cement:								
United States	3,595	1,884	1,428	1,078	10,322	14,695	672	
All other countries	42,705	73,416	60,915	139,174	226,173	181,598	233,784	331,143
Coal:								
United States		490				9,084	600	63
All other countries	503,599	495,573	437,079	559,256	522,127	405,682	474,390	567,157
Chemicals, drugs, and dyes:								
United States	28,631	35,029	60,777	63,997	64,855	81,393	73,838	100,724
All other countries	889,116	1,035,240	1,049,971	1,061,072	1,125,917	749,822	810,056	468,192
Cotton goods:								
United States	94,665	167,887	389,303	319,666	764,088	278,796	1,056,328	685,919
All other countries	9,346,382	6,798,091	5,895,067	4,642,688	5,572,874	6,363,533	7,263,751	7,325,915
Opium:								
United States							46	
All other countries	619,338	819,625	721,551	770,596	850,381	440,464	513,241	143,670
Manufactures of fibers, vegetable:								
United States	17,069	17,511	6,964	24,971	12,062	15,611	9,146	6,335
All other countries	313,826	404,367	324,627	234,499	258,982	322,214	546,329	607,804
Fish and fish products, including shellfish:								
United States	8,416	56,278	52,983	38,942	56,325	73,361	86,121	138,904
All other countries	161,531	314,655	379,503	193,058	187,475	189,555	208,793	255,756
Iron, steel, and manufactures of:								
United States	287,957	431,888	465,720	821,160	1,147,387	693,016	864,336	802,313
All other countries	1,573,991	1,656,222	1,436,771	1,591,776	1,498,736	1,103,637	1,680,656	1,362,594
Leather, and manufactures of, including boots and shoes:								
United States	38,086	83,610	118,332	147,586	214,326	240,414	304,364	462,756
All other countries	295 297	366,321	568,454	344,949	278,841	220,806	174,770	209,206
Malt liquors:								
United States	855,326	466,257	397,382	221,632	215,895	139,932	79,730	43,756
All other countries	192,409	81,260	90,749	88,779	62,837	85,550	62,108	46,836
Illuminating oils:								
United States	22,748	213,312	325,576	246,519	443,512	272,231	551,699	619,545
All other countries	428,601	284,327	326,981	238,916	349,385	86,086	238,748	186,567
Paper, and manufactures of:								
United States	77,192	280,192	134,701	102,864	141,232	115,912	135,473	167,928
All other countries	197,802	353,838	368,534	387,942	373,829	294,171	373,281	358,506

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Commodity and origin.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Provisions, including beef, hog, and other animal and dairy products:								
United States	$82,570	$108,305	$137,410	$207,631	$211,490	$221,084	$194,250	$195,027
All other countries	535,529	688,619	885,479	995,755	1,225,983	1,137,187	1,056,824	1,325,342
Rice:								
United States								
All other countries	5,490,958	6,578,481	10,061,323	11,548,814	7,456,738	4,375,500	3,662,493	5,861,256
Distilled spirits:								
United States	218,767	238,131	120,656	84,977	102,499	55,931	52,774	68,760
All other countries	193,092	272,127	187,025	142,601	167,207	143,594	166,193	171,466
Silk, and manufactures of:								
United States	3,275	4,068	5,710	4,853	10,290	5,943	4,880	12,978
All other countries	694,793	913,830	660,152	541,189	470,436	366,154	417,115	521,633
All other imports:								
United States	553,197	1,266,809	1,019,601	1,182,405	1,672,211	1,618,028	1,815,841	1,172,710
All other countries	5,485,710	6,081,644	4,602,226	4,341,014	3,431,886	3,616,803	4,341,798	4,268,546
Total imports:								
United States	2,666,930	4,035,243	3,944,082	4,338,458	5,761,660	4,333,917	5,664,002	5,079,670
All other countries	27,609,270	27,994,114	29,034,363	28,882,793	25,117,388	21,465,373	24,001,820	25,839,075
Grand total imports, all sources	30,276,200	32,029,357	32,978,445	33,221,251	30,879,048	25,799,290	29,665,822	30,918,745

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EXPORTS.

The value of exports (gold and silver currency not included) amounted to $32,829,816, which as compared with that of the previous year shows a falling off of $891,951. That amount, however, exceeds the value of exportations during any other fiscal year since American occupation except those of 1903 and 1907, and shows an excess over the annual average for the entire period of $5,174,822.

The following statement shows how exportations were distributed among the various countries to which the merchandise represented thereby was sent, and the percentage of the value of exportations to each of said countries with the total:

	Value of exports.	Percentage of total value.
United States	$10,332,116	31.5
United Kingdom	8,870,923	27.0
France	3,905,878	11.9
Hongkong	2,438,438	7.4
Spain	1,719,612	5.2
China	1,527,323	4.8
British East Indies	911,767	2.7
Germany	602,085	1.8
Australia	528,208	1.6
Belgium	516,326	1.6
Japan	493,800	1.5
All other countries	983,330	3.0
Total	32,829,816	100.0

The following is a comparative statement of the value of exports (gold and silver currency not included) from the Philippine Islands, by countries, during the four fiscal years ended June 30, 1908, in the order of relative importance during the fiscal year 1908:

	1905.	1906.	1907.	1908.
United States	$15,668,026	$11,560,169	$12,082,364	$10,332,116
United Kingdom	8,292,288	7,409,027	8,749,214	8,870,923
France	1,491,753	2,703,328	2,689,563	3,905,878
Hongkong	2,361,958	3,659,031	2,551,972	2,438,438
Spain	1,434,126	1,803,455	1,794,890	1,719,612
China	1,007,957	1,705,809	2,035,200	1,527,323
East Indies, British	624,312	667,022	799,125	911,767
Germany	129,610	459,426	788,018	602,085
Australia	442,922	457,271	481,676	528,208
Belgium	43,720	182,861	244,709	516,326
Japan	548,607	532,245	477,070	493,800
Austria-Hungary	37,282	379,021	340,145	349,071
Italy	59,316	71,200	155,284	248,014
Netherlands	73,032	65,852	313,056	161,178
East Indies, Dutch	24,132	31,509	24,632	51,102
Korea	2,090	3,534	7,198	14,102
Canada				14,470
East Indies, French	11,308	6,336	10,820	12,140
Siam			8,240	11,864
British Africa	820	8,760	7,700	11,414
Uruguay	7,040	17,402	14,565	9,210
Gibraltar	5,831	22,300	18,107	8,480
Portugal	7,900	7,380		7,154
Argentina	5,670	9,447	11,286	6,210
Canary Islands	760			6,144
All other countries	75,405	45,405	70,841	14,405
Total	41,248,064	41,010,541	45,171,101	32,829,816

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Commodity and origin.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Provisions, including beef, hog, and other animal and dairy products:								
United States	$82,570	$108,305	$137,410	$207,631	$211,490	$221,064	$194,250	$195,027
All other countries	535,529	688,619	885,479	995,755	1,225,983	1,137,187	1,056,824	1,325,342
Rice:								
United States								
All other countries	5,490,958	6,578,481	10,061,323	11,548,814	7,456,738	4,375,500	3,662,493	5,861,256
Distilled spirits:								
United States	218,767	238,131	120,656	84,977	102,499	55,931	52,774	68,760
All other countries	193,092	272,127	187,025	142,601	167,207	143,594	166,193	171,466
Silk, and manufactures of:								
United States	3,275	4,068	5,710	4,853	10,290	5,943	4,880	12,978
All other countries	694,793	913,839	660,152	541,189	470,436	366,154	417,115	521,633
All other imports:								
United States	553,197	1,266,809	1,019,601	1,182,405	1,672,211	1,618,028	1,815,841	1,172,710
All other countries	5,485,710	6,081,644	4,602,226	4,341,014	3,431,886	3,616,803	4,341,798	4,268,546
Total imports:								
United States	2,666,930	4,035,243	3,944,062	4,338,458	5,761,660	4,333,917	5,664,002	5,079,670
All other countries	27,609,270	27,994,114	29,034,363	28,882,793	25,117,388	21,465,373	24,001,820	25,839,075
Grand total imports, all sources	30,276,200	32,029,357	32,978,445	33,221,251	30,879,048	25,799,290	29,665,822	30,918,745

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EXPORTS.

The value of exports (gold and silver currency not included) amounted to $32,829,816, which as compared with that of the previous year shows a falling off of $891,951. That amount, however, exceeds the value of exportations during any other fiscal year since American occupation except those of 1903 and 1907, and shows an excess over the annual average for the entire period of $5,174,822.

The following statement shows how exportations were distributed among the various countries to which the merchandise represented thereby was sent, and the percentage of the value of exportations to each of said countries with the total:

	Value of exports.	Percentage of total value.
United States	$10,332,116	31.5
United Kingdom	8,870,923	27.0
France	3,905,878	11.9
Hongkong	2,438,438	7.4
Spain	1,719,612	5.2
China	1,527,323	4.8
British East Indies	911,767	2.7
Germany	602,085	1.8
Australia	528,208	1.6
Belgium	516,336	1.6
Japan	493,800	1.5
All other countries	983,330	3.0
Total	32,829,816	100.0

The following is a comparative statement of the value of exports (gold and silver currency not included) from the Philippine Islands, by countries, during the four fiscal years ended June 30, 1908, in the order of relative importance during the fiscal year 1908:

	1905.	1906.	1907.	1908.
United States	$15,668,026	$11,580,169	$12,082,364	$10,332,116
United Kingdom	8,292,288	7,499,627	8,749,214	8,870,923
France	1,491,753	2,703,328	2,689,593	3,905,878
Hongkong	2,361,958	3,659,031	2,551,902	2,438,438
Spain	1,434,126	1,803,455	1,794,890	1,719,612
China	1,007,957	1,705,809	2,035,390	1,527,323
East Indies, British	624,312	667,022	799,123	911,767
Germany	129,610	459,426	788,018	602,085
Australia	442,922	457,271	481,576	528,208
Belgium	43,720	182,861	244,759	516,336
Japan	548,607	532,245	477,070	493,800
Austria-Hungary	37,282	379,021	340,145	386,671
Italy	59,316	71,260	155,284	248,013
Netherlands	73,032	65,852	313,056	193,759
East Indies, Dutch	24,132	31,509	24,632	35,002
Korea	2,080	3,534	7,198	14,162
Canada	.....	.....	.....	13,425
East Indies, French	11,308	6,335	56,820	12,345
Siam	.....	.....	8,246	11,882
British Africa	830	8,760	7,760	11,314
Uruguay	7,040	17,422	14,553	9,919
Gibraltar	5,831	22,369	18,107	8,480
Portugal	7,900	7,380	.....	7,634
Argentina	5,670	9,447	11,226	5,875
Canary Islands	760	.....	.....	5,344
All other countries	75,405	45,409	70,841	19,505
Total	32,355,865	31,918,542	33,721,767	32,829,816

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The relative rank of the principal countries importing goods from the Philippine Islands during the fiscal years 1905, 1906, 1907, and 1908, graded according to value, is shown by the following table:

Country.	1905.	1906.	1907.	1908.
United States	First.	First.	First.	First.
United Kingdom	Second.	Second.	Second.	Second.
Hongkong	Third.	Third.	Third.	Fourth.
China	Fourth.	Sixth.	Fifth.	Sixth.
France	Fifth.	Fourth.	Fourth.	Third.
Spain	Sixth.	Fifth.	Sixth.	Fifth.
British East Indies	Seventh.	Seventh.	Seventh.	Seventh.
Japan	Eighth.	Eighth.	Tenth.	Eleventh.
Australia	Ninth.	Tenth.	Ninth.	Ninth.
Germany	Tenth.	Ninth.	Eighth.	Eighth.

Belgium is the tenth in the list for 1908.

The following table shows the total quantities and values of the principal products (gold and silver currency not included) exported from the Philippine Islands to the United States and to all other countries, by fiscal years, 1901 to 1908, inclusive:

Products.	Fiscal year.	United States.		All other countries.	
		Quantity.	Value.	Quantity.	Value.
		Pounds.		*Pounds.*	
Copra	1901	227,689	$4,450	115,579,681	$2,643,855
	1902	104	7	43,401,382	1,001,649
	1903	134,629	9,173	215,099,417	4,463,506
	1904	383,680	9,231	118,950,450	2,517,788
	1905	452,118	14,425	81,345,299	2,080,927
	1906	.....	.....	145,851,913	4,043,115
	1907	2,446,156	108,086	105,759,974	3,945,107
	1908	6,542,926	228,565	161,931,894	5,233,115
		Tons.		*Tons.*	
Hemp	1901	17,872	2,402,867	92,576	12,050,243
	1902	44,810	7,261,459	63,427	8,579,857
	1903	70,526	12,314,312	59,532	9,387,263
	1904	60,912	10,631,591	67,821	11,163,369
	1905	72,196	12,954,515	56,368	9,191,726
	1906	61,068	11,168,226	49,331	8,278,543
	1907	57,469	11,326,864	55,426	9,758,217
	1908	48,045	7,684,000	65,960	9,627,808
		Pounds.		*Pounds.*	
Sugar	1901	4,747,555	93,472	119,999,937	2,199,586
	1902	11,521,215	293,354	138,499,823	2,468,078
	1903	75,916,518	1,335,826	170,293,311	2,620,002
	1904	25,632,500	354,144	140,076,933	2,314,363
	1905	127,563,818	2,618,487	122,978,864	2,358,539
	1906	16,099,068	260,104	261,243,154	4,603,761
	1907	14,574,250	234,074	250,631,434	3,700,386
	1908	109,081,787	2,036,697	225,401,203	3,627,969
		Thousands.		*Thousands.*	
Cigars	1901	1,335	5,027	148,161	1,245,148
	1902	464	8,539	224,956	1,658,281
	1903	332	3,856	119,389	943,278
	1904	96	1,795	104,718	967,074
	1905	336	6,790	106,235	961,232
	1906	1,288	23,405	91,848	880,845
	1907	1,593	26,067	115,126	1,025,554
	1908	1,365	21,781	116,199	1,062,297
Cigarettes	1901	.....	.....	7,844	11,092
	1902	47	76	7,142	9,919
	1903	5	3	20,498	20,696
	1904	14	27	11,790	12,559
	1905	30	30	18,245	16,374
	1906	126	88	18,766	16,713
	1907	128	216	152,649	104,052
	1908	288	389	60,616	37,956

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Products.	Fiscal year.	United States.		All other countries.	
		Quantity.	Value.	Quantity.	Value.
		Pounds.		*Pounds.*	
All other tobacco	1901	.....	.....	17,936,905	$956,461
	1902	.....	.....	21,846,686	824,652
	1903	244,377	$42,293	20,500,287	871,654
	1904	211	35	19,142,021	1,031,797
	1905	.....	.....	17,344,574	1,011,612
	1906	110,120	7,510	21,360,225	1,461,329
	1907	.....	.....	30,133,080	1,973,305
	1908	.....	.....	23,264,901	1,592,123
All other exports	1901	.....	66,205	.....	1,543,942
	1902	.....	128,308	.....	2,310,679
	1903	.....	157,586	.....	980,562
	1904	.....	105,952	.....	1,116,402
	1905	.....	73,779	.....	1,067,429
	1906	.....	120,836	.....	1,054,067
	1907	.....	387,057	.....	1,132,782
	1908	.....	360,684	.....	1,316,432

	Total, United States.	Total, all other countries.	Grand total.
1901	$2,572,021	$20,650,327	$23,222,348
1902	7,691,743	16,853,115	24,544,858
1903	13,863,059	19,286,961	33,150,120
1904	11,102,775	19,123,352	30,226,127
1905	15,668,026	16,687,839	32,355,865
1906	11,580,169	20,338,373	31,918,542
1907	12,082,364	21,639,403	33,721,767
1908	10,332,116	22,497,700	32,829,816

For the purpose of showing the quantities and values of hemp, sugar, copra, leaf tobacco, cigars, and cigarettes exported to all countries and to the United States, from 1899 to 1908, inclusive, the following tables are submitted:

HEMP.

Fiscal years.	All countries.		To the United States.		
	Quantity.	Value.	Percentage of total exports.	Quantity.	Value.
	Tons.			*Tons.*	
1899	58,898	$6,185,293	45.1	22,703	$2,436,169
1900	75,496	11,393,883	52.6	25,358	3,446,141
1901	110,448	14,453,110	54.6	17,872	2,402,867
1902	108,237	15,841,316	58.3	44,810	7,261,459
1903	130,159	21,701,575	54.7	70,526	12,314,312
1904	129,742	21,794,960	58.8	60,912	10,631,591
1905	128,564	22,146,241	59.6	72,196	12,954,515
1906	110,399	19,446,769	59.5	61,068	11,168,226
1907	112,895	21,085,061	61.7	57,469	11,326,864
1908	114,005	17,311,808	52.7	48,045	7,684,000

SUGAR.

	Tons.			*Tons.*	
1899	13,246	$520,935	3.8	2,303	$143,502
1900	77,073	3,000,501	12.3	141	21,000
1901	55,691	2,293,058	8.6	2,119	93,474
1902	66,737	2,761,432	10.0	5,143	293,350
1903	109,889	3,955,828	9.9	33,891	1,335,826
1904	73,977	2,668,507	7.2	11,443	354,144
1905	111,850	4,977,026	13.4	56,948	2,618,487
1906	123,813	4,863,865	14.8	7,187	260,104
1907	118,395	3,934,460	11.5	6,506	234,074
1908	149,323	5,664,666	17.2	48,697	2,036,697

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COPRA.

Fiscal years.	All countries.		To the United States.		
	Quantity.	Value.	Percentage of total exports.	Quantity.	Value.
	Pounds.			*Pounds.*	
1899	30,968,544	$656,870	0.047	.....	.....
1900	81,749,665	1,090,879	.078	.....	.....
1901	115,807,370	2,648,305	.10	227,689	$4,450
1902	43,401,486	1,001,656	.036	104	7
1903	215,234,046	4,472,679	.112	134,629	9,173
1904	119,341,505	2,527,019	.07	383,680	9,231
1905	82,797,227	2,095,352	.056	452,118	14,425
1906	145,851,913	4,043,115	.123	.....	.....
1907	108,206,130	4,053,193	.118	2,446,156	108,086
1908	168,474,820	5,461,680	.166	6,542,926	228,565

LEAF TOBACCO.

	Pounds.			*Pounds.*	
1899	13,357,924	$917,536	0.067	.....	.....
1900	18,334,064	989,439	.045	.....	.....
1901	17,936,905	956,451	.036	.....	.....
1902	21,846,686	824,650	.03	.....	.....
1903	20,747,241	913,815	.023	244,377	$42,293
1904	19,142,232	1,031,832	.028	211	35
1905	17,346,424	1,011,612	.031	.....	.....
1906	21,470,345	1,468,839	.044	110,120	7,510
1907	30,133,080	1,973,305	.057	.....	.....
1908	23,264,901	1,592,123	.048	.....	.....

CIGARS.

	Thousands.			*Thousands.*	
1899	167,991	$1,294,653	9.7	1,810	$7,162
1900	219,098	1,189,942	5.4	532	1,885
1901	149,496	1,250,175	4.7	1,335	5,027
1902	225,420	1,666,822	6.0	464	8,539
1903	119,721	947,246	2.4	332	3,866
1904	104,803	968,869	2.6	96	1,795
1905	106,571	968,022	2.9	728	6,790
1906	93,136	904,250	2.6	1,288	23,405
1907	116,719	1,051,621	3.0	1,593	26,067
1908	117,564	1,084,078	3.3	1,365	21,781

CIGARETTES.

	Thousands.			*Thousands.*	
1899	4,869	$525	.....	.....	.....
1900	15	1,753	.....	.....	.....
1901	7,844	11,092	0.0004	.....	.....
1902	7,189	9,995	.0003	47	$76
1903	20,502	20,699	.0005	5	3
1904	11,804	12,586	.0003	14	27
1905	14,637	16,404	.0005	134	30
1906	18,892	16,801	.0005	126	88
1907	152,777	104,268	.003	128	216
1908	60,904	38,345	.....	288	389

During the past ten years hemp has furnished an average of 62 per cent of the values of all exports, the average annual shipments having been invoiced at $17,136,004, representing yearly exportations of 107,884 tons. The returns of 1908, however, show that, while the quantity exported was 6,121 tons above the average annual exportation since 1898, the percentage of the value to the total exports had fallen to 52.7. This precipitate decline in values is made distinctly

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apparent by comparing the figures of 1907 with those of 1908. During the former year the 112,895 tons were invoiced at $21,085,081, while the larger shipment of 114,005 tons in 1908 was valued at but $17,311,808, a reduction in value of $3,773,273, and an increase in quantity of 1,110 tons. The price of hemp opened at the beginning of the year, July, 1907, with the lowest range of prices quoted in years, current being sold at $140 per ton, and steadily declined until March, 1908, when the price quoted was but $72, a further reduction in value of 48.5 per cent in nine months. A slight recovery occurred in April, when the quotations rose to $96, but the fluctuation was only temporary, and the year closed with hemp selling at $89 per ton. This is in marked contrast with the average price during the last ten years of $158.84, and especially in the years 1905, 1906, and 1907, when prices generally ranged from $160 to $176, the lowest being $132, in 1907, and the highest $184 per ton during January, 1906.

VALUE OF IMPORTS AND EXPORTS.

The following table gives a summary of the value of imports (gold and silver currency not included) into the Philippine Islands from the United States and all other countries, during the five fiscal years ended June 30, 1908, by ports:

	1904.	1905.	1906.	1907.	1908.
From the United States to—					
Manila	$4,338,458	$5,399,551	$4,035,924	$4,929,413	$4,679,750
Cebu	107,232	177,631	92,304	387,023	143,646
Iloilo	167,393	170,672	160,410	288,307	217,066
Jolo	4,789	3,069	2,528	3,199	820
Zamboanga	14,432	10,370	42,542	55,723	38,115
Bongao	32	180	22	41	.....
Puerto Princesa [a]	379	.....	.....	.....	.....
Cape Melville [b]	23	.....	.....	.....	.....
Balabac	69	110	106	75	185
Jurata [c]	.....	.....	57	136	74
Sitanki [d]	.....	.....	.....	85	14
Total value imports from the United States	4,632,807	5,761,583	4,333,893	5,664,002	5,079,670
From all other countries to—					
Manila	23,339,548	20,548,510	17,820,661	19,815,580	20,817,175
Cebu	2,555,729	2,456,782	1,608,448	1,994,738	2,256,120
Iloilo	2,280,277	1,646,904	1,522,762	1,600,806	2,100,537
Jolo	264,721	271,041	229,244	271,378	291,253
Zamboanga	137,940	177,508	264,309	296,684	356,368
Bongao	2,398	4,286	4,742	503	102
Puerto Princesa [a]	3,936	.....	.....	.....	.....
Cape Melville [b]	1,486	.....	.....	.....	.....
Balabac	2,409	9,735	12,086	14,171	9,870
Jurata [c]	.....	.....	2,799	3,839	3,615
Sitanki [d]	.....	.....	322	4,121	4,035
Total imports from all other countries	28,588,444	25,114,766	21,465,373	24,001,820	25,839,075
Total value imports from all sources	33,221,251	30,876,349	25,799,266	29,665,822	30,918,745

[a] Closed October 15, 1904.
[b] Closed September 1, 1904.
[c] Opened July 3, 1905.
[d] Opened February 15, 1906.

The following table is a summary of the value of exports (gold and silver currency not included) from the Philippine Islands to the

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United States and to all other countries during the five fiscal years ended June 30, 1908, by ports:

	1904.	1905.	1906.	1907.	1908.
To the United States, from—					
Manila	$9,060,760	$10,305,484	$9,105,624	$9,012,359	$5,861,260
Cebu	1,684,567	2,914,398	2,213,447	2,835,008	2,431,362
Iloilo	354,488	2,448,144	260,340	234,958	2,039,274
Jolo	2,500	.....	.....	.....	.....
Zamboanga	460	.....	.....	39	220
Bongao	.....	.....	.....	.....	.....
Puerta Princesa [a]	.....	.....	.....	.....	.....
Cape Melville [b]	.....	.....	.....	.....	.....
Balabac	.....	.....	.....	.....	.....
Jurata [c]	.....	.....	.....	.....	.....
Sitanki [d]	.....	.....	.....	.....	.....
Total value exports to the United States	11,102,775	15,668,026	11,579,411	12,082,364	10,332,116
To all other countries, from—					
Manila	15,182,818	12,931,999	14,224,679	15,524,397	16,702,018
Cebu	1,464,533	2,326,345	2,403,543	2,658,126	3,175,045
Iloilo	2,294,592	1,187,015	3,412,683	3,042,257	2,120,362
Jolo	117,617	138,355	142,533	183,721	224,536
Zamboanga	56,033	86,395	129,687	205,947	255,586
Bongao	111	4,755	7,452	1,128	56
Puerto Princesa [e]	450	.....	.....	.....	.....
Cape Melville [f]	1,859	.....	.....	.....	.....
Balabac	2,254	9,725	12,128	11,865	10,052
Jurata [g]	.....	.....	4,401	5,412	2,149
Sitanki [h]	.....	.....	617	6,550	7,896
Total value exports to all other countries	19,120,267	16,684,589	20,337,723	21,639,403	22,497,700
Total value exports to all countries	30,223,042	32,352,615	31,917,134	33,721,767	32,829,816

[a] Closed October 15, 1904.
[b] Closed September 1, 1904.
[c] Opened July 3, 1905.
[d] Opened February 15, 1906.
[e] Closed October 15, 1904.
[f] Closed September 1, 1904.
[g] Opened July 3, 1905.
[h] Opened February 15, 1906.

Balance of Trade.

The value of merchandise purchased abroad was $30,918,745, as compared with $32,829,816, the value of local products exported, leaving a balance of trade in favor of the islands of $1,911,071, thus reducing the total balance which had accumulated on the other side since American occupation, and prior to 1905, to $2,175,450, and the average balance of trade in favor of importation during the past ten years to $217,545. Comparing the trade of 1908 with that of 1907, when the value of commercial imports was $28,786,063 and of exports $33,721,767, an increase is found in the former of $2,132,682 and in the latter a decrease of $891,951.

Customs Collections and Expenditures.

The gross collections of the bureau of customs at all ports of the Philippine Islands aggregated $8,318,020.39, which, as compared with $8,194,708.52 for the previous year, shows a gain of $122,311.89. The collections exceeded the average annual collections of the past ten years by $665,582.80, and were slightly less than the annual receipts recorded during 1901–4.

Of the total gross receipts, $181,556.25 were collected on account of the Moro Province, at the entry ports therein, and delivered in

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full to the government of said province; while the remainder, $8,136,464.14, accrued to the general insular government and was turned into the insular treasury.

The increases in collections over the previous year were represented by increased receipts from import duties of $50,683, export duties, $16,199.02; wharfage dues, $42,899.82; immigration dues, $15,986.50; storage, $4,890.84, and miscellaneous collections, $7,404.83; while a decrease of $2,206.55 is shown in the coastwise tonnage tax, and $10,712.77 in foreign tonnage collections.

The total receipts of the year were derived from the following sources:

Customs receipts:		
Import duty	$6,692,079.06	
Export duty	1,170,087.08	
Wharfage dues	278,760.16	
Storage collections	10,829.98	
Sale of customs stamps	35,925.80	
		$8,187,682.08
Other receipts:		
Immigration collections	35,622.00	
For licenses of vessels	43,468.07	
For fines, penalties, etc	4,896.05	
Sale of blank forms	1,067.88	
Miscellaneous fees (official fee stamps affixed to official documents)	16,164.33	
Surplus from auction sales	2,460.56	
Extra service (refundable)	17,437.25	
Salaries, storekeepers' bonded warehouses (refundable)	3,149.22	
Miscellaneous collections (including sale of property, etc)	6,072.95	
		130,338.31
Total		8,318,020.39

The sum of $1,170,087.08 collected as export duties includes $370,513.66 subject to refund under the provisions of section 2 of the act of Congress of March 8, 1908.

The following table shows the amount of export duty subject to refund by fiscal years, 1902 to 1908, inclusive:

	Manila.	Cebu.	Total.
1902	$35,346.83	$35,717.86	$71,064.69
1903	410,946.43	116,281.67	527,228.10
1904	378,213.07	84,220.76	462,433.83
1905	376,195.12	110,380.44	486,575.56
1906	347,296.13	86,695.66	433,991.79
1907	327,836.82	105,621.76	433,458.58
1908	245,854.11	124,659.25	370,513.36
Total	2,121,688.51	663,577.40	2,785,265.91

The following tables show the receipts of the bureau of customs at all entry ports in the Philippine Islands, by ports and by sources, for the fiscal years 1904, 1905, 1906, 1907, and 1908; also total reve-

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nues accruing respectively to the insular government and to the government of the Moro Province:

TABLE No. 1.—*Receipts by ports.*

	1904.	1905.	1906.	1907.	1908.
Insular government:					
Manila	$7,131,379.86	$6,814,910.78	$6,160,408.01	$6,605,887.66	$6,568,269.77
Cebu	634,817.03	782,787.59	644,212.45	802,591.47	869,814.04
Iloilo	604,652.27	531,266.01	585,329.82	596,015.86	694,903.04
Balabac	743.39	3,267.12	3,825.94	4,718.67	3,477.29
Aparri [a]	1,592.41	.....	.....	.....	.....
Puerta Princesa [b]	1,718.77	.....	.....	.....	.....
Cape Melville [c]	545.28	.....	.....	.....	.....
Total accruing to the insular government	8,375,449.01	8,132,231.50	7,393,776.22	8,009,213.66	8,136,464.14
Moro government:					
Jolo	76,076.05	75,300.28	67,214.89	82,028.30	77,589.04
Zamboanga	41,120.20	54,359.93	89,409.48	100,446.28	101,059.07
Bongao	1,223.00	1,552.54	1,456.81	346.77	55.19
Jurata [d]	.....	.....	1,244.00	1,434.87	1,329.30
Sitanki [e]	.....	.....	104.66	1,238.64	1,523.56
Total accruing to the government of the Moro Province	118,419.25	131,212.75	159,429.84	185,494.86	181,556.25
RECAPITULATION.					
Total receipts accruing to the insular government	8,375,449.01	8,132,231.50	7,393,776.22	8,009,213.66	8,136,464.14
Total receipts accruing to the government of the Moro Province	118,419.25	131,212.75	159,429.84	185,494.86	181,556.25
Gross receipts of the bureau of customs at all entry ports of the Philippine Islands	8,493,868.26	8,263,444.25	7,553,206.06	8,194,708.52	8,318,020.39

[a] Closed October 15, 1903. [b] Closed October 15, 1904. [c] Closed September 1, 1904.
[d] Opened July 3, 1905. [e] Opened February 15, 1906.

TABLE No. 2. *Receipts, by sources.*

	1904.	1905.	1906.	1907.	1908.
Insular government:					
Import duty	$6,633,019.41	$6,545,255.38	$5,916,403.23	$6,466,852.47	$6,525,247.97
Export duty	1,250,934.45	1,079,858.71	1,049,169.63	1,151,120.99	1,165,122.19
Harbor improvement tax	137,424.17	217,458.57	235,937.21	233,049.82	275,003.04
Tonnage tax—					
Coastwise	107,528.27	102,514.15	49,486.71	45,365.54	43,053.04
Foreign	69,247.97	60,909.33	48,320.70	10,058.22	.....
Fines and seizures	30,348.89	9,161.32	5,107.65	5,544.93	4,732.75
Storage	12,522.52	7,203.37	7,751.42	5,628.85	10,616.75
Immigration dues	19,625.00	22,968.00	18,812.00	19,077.50	33,560.00
Admeasurement fees	8,325.48	8,816.12	1,523.28	1,210.81	.....
Auction sales	5,653.75	4,588.85	1,170.29	2,138.16	2,460.56
Various other sources	100,819.10	73,497.70	60,094.10	69,166.37	76,667.84
Total all ports except those in the Moro Province	8,375,449.01	8,132,231.50	7,393,776.22	8,009,213.66	8,136,464.14
Moro Province:					
Import duty	107,098.15	118,841.55	147,928.94	174,543.58	166,831.09
Export duty	2,573.22	2,427.69	2,564.46	2,767.07	4,964.89
Harbor improvement tax	.....	983.32	2,617.76	2,721.52	3,757.12
Tonnage tax—					
Coastwise	1,046.94	1,166.23	431.96	309.07	415.03
Foreign	1,393.39	1,678.55	2,240.13	654.55	.....
Fines and seizures	494.11	332.75	301.15	107.51	163.30
Storage	128.06	294.22	132.61	310.28	213.23
Immigration dues	444.00	452.00	500.50	559.00	2,062.00
Admeasurement fees	392.84	325.50	10.50	.....	.....
Auction sales	1,219.74	828.82	3.55	277.02	.....
Various other sources	3,628.80	3,882.12	2,698.28	3,245.26	3,149.59
Total all ports in the Moro Province	118,419.25	131,212.75	159,429.84	185,494.86	181,556.25

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TABLE No. 2. *Receipts, by sources*—Continued.

	1904.	1905.	1906.	1907.	1908.
RECAPITULATION.					
Receipts all ports, by sources:					
Import duty	$6,740,117.56	$6,664,096.93	$6,064,332.18	$6,641,396.06	$6,602,079.06
Export duty	1,263,507.67	1,082,286.40	1,051,734.09	1,153,888.06	1,170,087.08
Harbor improvement tax	137,424.17	218,441.89	238,554.97	235,771.34	278,760.16
Tonnage tax—					
Coastwise	108,575.21	103,680.39	49,918.67	45,674.62	43,468.07
Foreign	70,641.36	62,597.88	50,560.83	10,712.77	.....
Fines and seizures	30,843.00	9,494.07	5,408.80	5,652.43	4,896.05
Storage	12,650.58	7,497.59	7,884.03	5,939.14	10,829.98
Immigration dues	20,069.00	23,420.00	19,322.50	19,635.50	35,622.00
Admeasurement fees	8,718.32	9,141.62	1,533.78	1,210.82	.....
Auction sales	6,873.49	5,204.18	1,173.84	2,415.18	2,460.56
Various other sources	104,447.90	77,593.30	62,782.37	72,412.60	79,817.43
Gross receipts of the bureau of customs at all ports in the Philippine Islands	8,493,868.26	8,263,444.25	7,553,206.06	8,194,708.52	8,318,020.39

The total expenditures of the bureau of customs, for all purposes, and at all ports, were $451,463.13, as compared with $461,111.45 during the previous year, showing a decrease of $9,648.32, although the volume of business transacted has been considerably larger. Of these expenditures, $22,528.64 were disbursed on account of the Moro Province for maintenance of the service therein, except customs cutters, and were paid from the treasury of that province, and $428,934.49 have been paid from appropriations by the insular government.

Of the total expenditures, $314,121.14 were disbursed in the collection of customs revenue, and are therefore chargeable as cost of collection; while $137,341.99 were expended to carry out the other functions of the bureau which have no direct connection with the customs revenue.

The following table shows the receipts and expenditures throughout the islands, and the corresponding cost of collection at the several entry ports:

Customs receipts, expenditures, and cost of collection.

	Receipts.	Expenditures.	Cost of collecting each dollar.
Manila	$6,455,727.29	$241,801.59	$0.0375
Cebu	862,638.97	24,203.80	.0281
Iloilo	687,455.54	23,223.64	.0338
Balabac	3,350.55	2,363.47	.7053
Total (insular government ports)	8,009,172.35	291,592.50	.0364
Jolo	76,678.92	9,216.41	.1201
Zamboanga	99,136.60	9,121.01	.0920
Bongao	53.65	379.31	7.0700
Jurata	1,223.92	1,908.15	1.5590
Sitanki	1,416.64	1,903.76	1.3430
Total (Moro Province ports)	178,509.73	22,528.64	.1260
Total (all ports)	8,187,682.08	314,121.14	.0383

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Port of Bongao.

This port was created by Act No. 898, enacted September 24, 1903. The object of the opening thereof was to facilitate the foreign commerce between Borneo and the southern part of the district of Jolo. The experience, however, has shown that the foreign commerce transacted at said port was not such as to warrant the maintenance of the same at a loss to the government. For this reason, by executive order of the governor-general, No. 50, dated November 8, 1907, the port of Bongao was closed.

The customs receipts from the first of the fiscal year up to and including the time business was suspended were but $55.19, and expenditures amounted to $379.31, while imported merchandise to the value of $102 was entered, and exports declared at $56 were shipped to foreign ports. The annual receipts and expenditures at the port of Bongao have been as follows:

	Receipts.	Expenditures.
1904	$1,223.00	$1,533.87
1905	1,552.54	4,732.73
1906	1,456.81	3,683.13
1907	346.77	2,078.52
1908	55.19	379.31

Ports of Jurata and Sitanki.

These ports were opened to foreign commerce July 3, 1905, and February 15, 1906, respectively. During the period they were maintained as subports of entry, and the expense incident to the customs service thereat was considerably in excess of receipts. The principal object in establishing them was to decrease the illicit traffic with adjacent islands, by affording the inhabitants of these remote places an opportunity to import merchandise through legitimate channels in small vessels from Borneo, rather than to require them to make their purchases through distant Philippine entry ports with which they, at that time, had little or no communication. These two ports are now, however, included in the itineraries of interisland steamships, so that merchandise may be obtained with equal or greater facility from other home ports than from Borneo. Moreover, Act No. 1844, restricting foreign commerce to vessels of over 30 tons burden, now renders the traffic with Borneo in small vessels unlawful.

For these reasons these ports were, by executive order of the governor-general, No. 39, ordered closed from and after June 30, 1908.

Foreign Carrying Trade.

The foreign carrying trade during the year 1908 represents the entrance of 1,033 and the clearance of 1,010 steam and sailing vessels. Of these, 849 entered with cargo and 358 cleared in ballast, while 184 entered in ballast and 652 cleared with cargo. The aggregate tonnage of the vessels represented by these entrances and clearances was 2,976,350 registered tons, an increase of 361,516 over 1907.

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The value of goods imported into the Philippine Islands in British vessels amounted to $16,252,967, which constitutes 52 per cent of the total import value for the year.

The value of products shipped from the islands in British vessels aggregated $24,667,814, or 76 per cent of the total export value, remarkably in excess of that consigned to Great Britain, which amounted to $8,870,923.

The following table affords a comparison of the values of cargoes brought to the Philippine Islands in vessels of various nationalities with those of cargoes exported:

Nationality of vessels in which carried.	Value of cargoes imported.	Value of cargoes exported.
British	$16,252,967	$24,667,814
Spanish	5,425,498	2,435,055
German	3,796,631	1,868,392
Norwegian	2,085,292	387,314
Philippine Islands	1,155,614	55,408
Japanese	995,964	1,576,120
American	677,181	931,889
French	292,768	906,643
All other	236,810	1,181
Total	30,918,745	32,829,816

Vessels registered in the Philippine Islands imported merchandise invoiced at $1,155,614 and exported goods of the value of $55,408. There was an increase of $492,713 in the value of cargoes carried in domestic vessels over that for the year 1907, a falling off in the values of cargoes carried by American, British, and Spanish vessels, and an increase in those brought in French, German, Swedish, Japanese, and Norwegian bottoms, as compared with the values of cargoes for the year 1907.

There was a decrease from the preceding year in the export cargoes carried by British, French, German, Spanish, Norwegian, and domestic vessels, while the values of those exported in American and Japanese vessels showed an increase to the extent of $100,426 and $1,018,094, respectively.

General Coastwise Trade.

During 1908, 8,572 entrances and 8,568 clearances of vessels licensed to engage in the coastwise trade between ports of the Philippine Islands were effected, an increase of 609 entrances and 522 clearances over the corresponding numbers of the previous year, indicating an increased activity in the interisland commerce. These entrances and clearances represent a total tonnage movement of 1,952,909 tons, as against 1,794,104 during 1907, an increase of 158,805 tons.

On June 30, 1908, there were 164 steam vessels, 386 sailing vessels, and 53 lighters and other craft of over 15 tons burden operating in the general coastwise trade, representing an aggregate of 49,618 registered tons.

There is, in addition, a number of craft licensed to ply in the districts of Manila, Iloilo, and Cebu, their operation being confined to the limits of the respective ports at which their licenses were issued.

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Of these craft there are at the port of Manila 84 steam vessels, with an aggregate of 1,612.62 register tons, and 423 lighters and cascoes, of 22,497.78 register tons; 3 at the port of Iloilo, and 31 at Cebu, with tonnage aggregating 60.89 and 956.69, respectively.

Merchant Marine.

The board on Philippine marine examinations examined 175 applications for licenses of all classes, 33 less than during the preceding year. Of the applicants examined, 110 passed and 65 failed to obtain the necessary average to secure licenses.

The following table shows the number of officers of all classes available for service at the end of the year, and the number of those recorded whose licenses have expired:

Marine officers available and unavailable for service, June 30, 1908.

Class.	Available, with unexpired licenses and certificates.				Unavailable, with expired licenses and certificates.			
	Americans.	Filipinos.	Foreigners.	Total.	Americans.	Filipinos.	Foreigners.	Total.
Masters	17	48	35	100	50	17	44	111
Chief mates	5	19	7	31	14	5	8	27
Second mates	3	14	.....	17	11	7	3	21
Third mates	1	30	.....	31	4	9	.....	13
Patrones, 250 steam and 700 tons sail	1	14	.....	15	4	2	.....	6
Patrones, 200 steam and 700 tons sail	.....	1	.....	1	.....	1	.....	1
Patrones, 200 steam and sail	5	91	3	99	5	101	3	109
Patrones, 200 tons sail	.....	3	.....	3	.....	9	.....	9
Chief engineers	8	112	15	135	12	38	29	79
First assistant engineers	3	75	4	82	6	26	5	37
Second assistant engineers	1	116	3	120	10	26	3	39
Bay and river engineers	.....	119	1	120	1	160	.....	161
Total	44	642	68	754	117	401	95	613

Immigration.

The following tables show the number of passengers arriving at and departing from the Philippine Islands during the fiscal years 1904–1908, inclusive:

ARRIVED.

Nationality.	1904.	1905.	1906.	1907.	1908.
Americans	13,151	12,931	7,647	3,058	3,521
Filipinos	941	1,187	693	823	802
Spaniards	688	569	580	544	436
Japanese	2,770	1,167	277	374	381
British	424	438	479	328	463
Germans	113	82	89	93	135
Italians	59	26	9	40	39
French	58	79	75	37	87
Other Europeans	197	200	133	134	243
East Indians	230	208	84	85	157
Chinese	9,089	8,825	7,966	8,141	5,735
Other Asiatics	68	15	28	36	89
Miscellaneous	198	174	233	196	157
Total	27,986	25,901	18,293	13,898	12,345

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DEPARTED.

Nationality.	1904.	1905.	1906.	1907.	1908.
Americans	1,438	1,910	1,833	2,028	1,901
Filipinos	751	668	587	722	981
Spaniards	449	551	450	494	460
Japanese	284	827	371	318	266
British	210	409	419	288	372
Germans	69	101	75	89	107
French	29	44	59	44	65
Other Europeans	52	124	81	62	57
East Indians	146	171	82	72	85
Chinese	4,112	7,715	6,719	7,122	5,829
Miscellaneous	174	255	337	485	313
Total	7,714	12,775	11,013	11,724	10,436

From these tables it appears that the steady decrease of American immigration to the Philippine Islands and the steady increase of the departures of Americans for the home land and other countries since 1904 stopped in 1908, during which there were 463 more arrivals and 127 less departures than for the year 1907. It also appears that, except in 1906, the number of arrivals of Japanese exceeded that of departures.

During the year 1908 a smaller number of Chinese arrived in the islands than in any other year, having been 5,735, as compared with 8,141 during 1907, a decrease of 2,406. During the same period 5,829 Chinese departed, or 1,293 less than during 1907. During the fiscal year 1908 only 33 Chinese merchants came to the islands on section 6 certificates; as compared with 320, or, omitting 208 actors, 112 for the previous year, a considerable decrease.

The number contributed by the principal Chinese ports for the last three years (excluding actors) is as follows:

	1906.	1907.	1908.
Amoy	42	28	6
Hongkong	0	3	2
Canton	1	4	2
Foochow	5	72	13
Shanghai	5	4	2
Formosa	2	1	8
Total	55	112	33

It will be noticed that from the port of Foochow 5 Chinese merchants came during the fiscal year 1906 and 72 in 1907, showing an increase of 67, but in 1908 only 13 Chinese merchants did so. This considerable decrease was predicted in the report of this department for the fiscal year 1907, and was due, as stated therein, to the suppression of the "Pu An Guaranty Company," which was engaged in promoting illegal immigration of Chinese to the Philippine Islands.

Notwithstanding the efforts of the immigration authorities to prevent the importation of Chinese slaves, who entered into the islands under the pretense that they were minor children of Chinese merchants resident in the islands and therefore entitled to be admitted,

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attention was called last year to the fact that this illicit traffic was going on. The restrictive measures, however, taken during the past year and the rigid definition of the term "merchant," as applied to local dealers, have eliminated a large number of the fraudulent or slave cases; for as there were brought to the port of Manila during 1906, 511 Chinese children, of whom but 49 were over 16 years of age, and 938 in 1907, of whom 125 were over 16 years, this past year there have been brought but 569 children, of whom 136 were over 16 years. Of this 569, 18 were females, and the total number of minor children applying at all ports was 717, which was considerably less than the number applying at the port of Manila alone during the fiscal year 1907.

PERSONNEL.

The following table shows the average personnel of the service at the port of Manila during the fiscal years 1901 to 1908, inclusive, as well as the average percentage of Americans and Filipinos employed during that period:

Fiscal year ended June 30.	Classified.				Unclassified Filipinos.	Total.		Grand total.
	Americans.		Filipinos.			Americans.	Filipinos.	
	Number.	Per cent.	Number.	Per cent.				
1901	115	0.381	187	0.619	74	115	261	376
1902	168	.449	206	.551	111	168	317	485
1903	200	.474	222	.526	98	200	320	520
1904	219	.501	218	.499	173	219	391	610
1905	194	.416	272	.584	146	194	418	612
1906	188	.395	288	.605	157	188	445	633
1907	142	.352	261	.648	175	142	436	578
1908	130	.340	252	.660	207	130	459	589

The proportion of Filipinos employed in the classified service at the port of Manila has increased from 65 per cent in 1907 to 66 per cent on June 30, 1908. Of the total number of employees on the date last mentioned, 77.9 per cent were Filipinos, as against 75.5 per cent in 1907. The unclassified employees, 207 in number, are all Filipinos.

The total number of classified employees at all subports was 75, of which 20, or 36 per cent, were Americans, and 55, or 64 per cent, Filipinos, while the total number of unclassified employees, all Filipinos, was 31, which shows that 81 per cent of the total number of employees are Filipinos.

For further information and more complete details as to the operations of the bureau of customs, reference is hereby made to the report of the insular collector of customs, which is hereto attached, made a part of the report, and marked "Exhibit No. 3."

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BUREAU OF INTERNAL REVENUE.

COLLECTIONS.

The following is a summary of collections made during the fiscal years 1907 and 1908 by the collector of internal revenue acting for and in behalf of the insular government:

	1908.	1907.
Internal-revenue law (Act No. 1189, Philippine Commission):		
Manufactures of alcohol and tobacco products	₱4,990,638.48	₱4,736,089.51
Licenses—		
Dealers in alcohol and tobacco products	502,183.93	511,358.68
Merchants, manufacturers, and common carriers	1,305,313.70	1,374,245.97
Occupations, trades, and professions	417,180.40	390,172.72
Mines and mining concessions	329.28	2,140.19
Banks and bankers	167,892.02	141,606.78
Insurance companies	19,456.11	20,599.06
Documentary stamp taxes	182,725.40	181,136.96
Cedulas	3,285,479.00	1,919,705.00
Forest products	211,570.62	164,143.32
Miscellaneous	1,275.42	897.33
Total	11,084,044.36	9,432,095.52
Opium law (Acts Nos. 1461 and 1761, Philippine Commission)	311,953.90	[a] 589,621.77
Weights and measures law (Act No. 1519, Philippine Commission)	29,326.35	[b] 5,746.15

[a] Taxes collected, eight months only, during 1908. Prohibition effective March 1, 1908.
[b] Manila and province of La Laguna, four months only, during 1907. In operation during 1908 in part of slands only.

The following is a summary of collections made during the fiscal years 1907 and 1908 by the collector of internal revenue, as ex officio assessor and collector for the city of Manila:

	1908.	1907.
City of Manila taxes and revenues (various acts of the Philippine Commission):		
Real-estate tax	₱1,283,795.34	₱1,302,855.00
Matadero receipts	176,671.02	164,962.53
Market receipts	283,150.15	238,054.41
Municipal licenses	224,532.56	216,850.40
Rentals of city property	22,356.03	19,950.32
Municipal court receipts	55,045.37	53,331.43
Pail system	56,168.03	48,508.26
Vault cleaning	21,538.00	39,199.00
Building permits	14,994.87	15,314.47
Water rents	234,478.23	221,187.98
Board of health fees	14,538.70	9,752.60
Justice of peace and sheriff's fees	17,670.55	22,721.22
Cementerio del Norte	12,349.08	10,996.50
Franchise taxes of Manila Electric Railway and Light Company	47,208.23	40,861.54
Other minor receipts, miscellaneous, and internal-revenue dividend	382,821.87	263,487.44
Total	2,859,318.03	2,668,033.10
San Lazaro estate (executive order No. 15, series 1906)	54,063.23	53,467.37
Sale public mineral lands (act of Congress, approved July 1, 1902)	1,047.28	.....

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The following is a résumé of the collections made by the bureau of internal revenue for the insular government and for the city of Manila during the years 1907 and 1908:

	1908.	1907.
Internal-revenue taxes	₱11,084,044.36	₱9,432,095.52
Opium taxes	311,953.90	589,621.77
Weights and measures taxes	29,326.35	5,746.15
Municipal taxes, city of Manila	2,859,318.03	2,668,033.10
San Lazaro estate rentals	54,083.23	53,467.97
Sale public mineral lands	1,047.28	.....
Grand total	14,339,773.15	12,748,963.91

Of the total collections made by the bureau of internal revenue, 59 per cent was collected in Manila and 41 per cent in the provinces.

APPORTIONMENT OF INTERNAL-REVENUE TAXES.

The total amount of taxes collected under the internal-revenue law, as appears from the résumé, was ₱11,084,044.36, and under the apportionment provisions of said internal-revenue act as amended was distributed among the insular and provincial treasuries as follows:

	1908.	1907.
To the insular treasury:		
During the entire fiscal year 1907 (75 per cent)	.....	₱5,425,485.23
July 1, 1907, to August 19, 1907 (75 per cent)	₱937,630.97	.....
August 20, 1907, to December 31, 1907 (70 per cent) [a]	1,740,809.69	.....
January 1, 1908, to June 30, 1908 (60 per cent) [a]	2,240,866.41	.....
Total	4,919,307.07	5,425,485.25
To the provincial treasuries:		
One-half of regular cedula taxes	968,007.75	959,852.50
All road and bridge cedula taxes [b]	1,349,463.50	.....
Share of other collections during entire fiscal year 1907 (10 per cent)	.....	723,398.03
Share of other collections July 1, 1907, to December 31, 1907 (10 per cent) [a]	373,704.56	.....
Share of other collections January 1, 1908, to June 30, 1908 (20 per cent) [a]	746,955.47	.....
Total	3,438,131.28	1,683,250.53
To the municipal treasuries:		
One-half of regular cedula taxes	968,007.75	959,852.50
Certain license taxes	326,742.40	278,410.22
Share of other collections during entire fiscal year 1907 (15 per cent)	.....	1,085,097.04
Share of other collections July 1, 1907, to August 19, 1907 (15 per cent) [a]	187,826.19	.....
Share of other collections August 20, 1907, to June 30, 1908 (20 per cent) [a]	1,244,329.67	.....
Total	2,726,606.01	2,323,359.76
Grand total	11,084,044.36	9,432,095.52

[a] Act No. 1695. [b] Act No. 1652.

COST OF COLLECTION.

The cost of collections, including estimated unpaid obligations incurred during the year, was ₱700,000, or 4.9 per cent of the receipts. In this amount the expenses incurred by provincial governments in aiding the collector of internal revenue are not included. Of the total of ₱700,000 expended for the collection of taxes ₱577,374 came out of the insular appropriation, ₱101,809 out of the city of

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Manila fund as compensation for the assessment and collection of the said taxes, and ₱20,817 out of the special opium fund created by Act No. 1761.

Alcohol Products.

DISTILLED SPIRITS.

The following comparative table is submitted to show the amount of the distilled spirits manufactured in these islands during the fiscal years 1906, 1907, and 1908, the amount consumed in the islands, and that exported to foreign countries:

Fiscal year.	Distilled spirits manufactured and—		Total.
	Consumed in the Philippine Islands.	Exported to foreign countries.	
	Proof liters.	*Proof liters.*	*Proof liters.*
1906	6,043,022	.....	6,043,022
1907	8,251,101	2,464	8,253,565
1908	8,641,291	592	8,641,883

The above table shows an increase of production and consumption in these islands from one year to another. The exportation during this year was less than that of the preceding year. The taxes collected on distilled spirits for domestic consumption amounted to ₱1,729,757.16, as compared with ₱1,681,419 during the preceding fiscal year, an increase of ₱48,338.16.

During the year, the few remaining cauas of the 450 heretofore in operation ceased to be used, and in their place about 15 stills of a modern type were installed in the various provinces. At the end of June, 1908, there were in operation 68 stills of modern type. Considerable improvement was made during the year in the equipment and management of distilleries.

FERMENTED LIQUORS.

There were collected as taxes on beer removed for domestic consumption ₱137,390 as compared with ₱122,390 during the preceding fiscal year, an increase of ₱15,000, equal to an increase in the output of the one brewery in the islands of 375,000 liters, or over 12 per cent. During the year 5,890 liters of beer were exported to other countries, as compared with 878 liters during the preceding fiscal year. Foreign beers continue to be imported but in smaller quantities, the prices at which they are sold preventing serious competition with the domestic product.

Manufactured and Unmanufactured Tobacco.

LEAF TOBACCO.

In order to avoid great reduction in the quantity as well as in the quality of leaf tobacco used for wrappers, largely due to poor methods in taking care of the plants and poor packing of leaf, and to

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increase and improve the production of leaf tobacco, the internal-revenue office has prepared regulations for the guidance of tobacco growers, manufacturers, and internal-revenue officers. These began to be put into effect in September, 1907, and are now in operation in the principal tobacco-producing provinces. They have also the purpose of furnishing data of great assistance in the prevention of frauds on the revenues, as well as statistical data, which will be of great value to the government and to the growers and the manufacturers themselves. Provisions are contained therein requiring the tobacco growers, in the curing and preparation of tobacco, to properly smooth, fold, and press its leaves and arrange same into manos duly classified as to size, kind, and quality. By Act No. 1767, passed October 11, 1907, and beginning with the calendar year 1908, yearly bounties are granted by the government with the object of increasing and improving the production of tobacco. These bounties and the regulations above referred to will no doubt result in an improvement in the quality and an increase in the quantity of tobacco produced.

MANUFACTURED TOBACCO.

There were collected as tax on chewing and smoking tobacco, exclusive of cigars and cigarettes removed for domestic consumption, ₱110,752.50, as compared with ₱106,287.54 during the preceding fiscal year. This was an increase in the revenues of ₱4,464.96, corresponding to an increase in the output from the various factories of 9,302 kilograms of smoking and chewing tobacco.

The following table represents the exportation of smoking tobacco to other countries during the fiscal years 1906, 1907, and 1908. No tax has been collected on the exported tobacco.

Country to which exported.	Total exports for the fiscal year—		
	1908.	1907.	1906.
	Kilos.	*Kilos.*	*Kilos.*
High seas	7,735	7,191	5,676
Canary Islands	7,360	8,280	1,840
North Africa	3,680	.....	.....
Gibraltar	3,312	55,201	28,169
England	2,336	498	.....
China	1,188	1,290	1,497
France	1,150	.....	.....
Italy	690	1,840	1,840
Germany	193	418	3
India	127	194	108
New Guinea	100	4	.....
Straits Settlements	6	36	.....
Japan	6	.....	.....
Java	5	.....	.....
Morocco	.....	460	.....
Central Africa	.....	23	.....
Spain	.....	8	1,840
Indo-China	.....	3	.....
Africa	.....	.....	18,400
Egypt	.....	.....	6
United States	.....	.....	1
Total	27,888	75,446	59,380

The table shows how the exportation of tobacco has decreased. In the fiscal year 1908 it was reduced to nearly one-third of the exportation for the fiscal year 1907.

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CIGARS.

The internal-revenue tax collected on manufactured cigars disposed of for domestic consumption amounted to ₱195,394.44, as compared with ₱189,850.57 during the fiscal year 1907, an increase of ₱5,543.87. In addition to the cigars disposed of for domestic consumption in these islands, 115,768,509 cigars, tax free, were exported to other countries, as compared with 117,766,660 for the fiscal year 1907, and 94,341,542 for the fiscal year 1906. The following table shows the countries to which such cigars were exported, and the total exportation for the fiscal years 1906, 1907, and 1908:

Country to which exported.	Total exports for the fiscal year—		
	1908.	1907.	1906.
	Number.	*Number.*	*Number.*
China	47,746,584	52,239,068	41,277,617
Australia	13,115,462	10,428,046	11,200,571
Straits Settlements	11,088,978	8,456,951	6,308,658
England	8,356,487	11,106,243	9,956,576
Spain	5,604,000	6,267,708	3,115,260
India	5,528,157	4,203,799	4,291,376
Japan	3,988,352	4,778,695	339,615
High seas	3,083,294	3,030,680	3,130,419
Germany	2,990,445	2,447,087	3,579,465
France	2,601,275	3,296,605	3,640,900
South Africa	1,947,820	1,364,952	.....
Java	1,365,106	768,175	226,400
Canada	1,292,267	1,216,500	522,600
Indo-China	780,834	554,131	256,449
Holland	770,095	428,600	208,500
South America	672,535	1,946,000	1,553,100
New Zealand	665,454	802,426	672,649
Gibraltar	518,000	463,500	600,150
Italy	478,795	489,250	744,050
Siam	440,700	460,275	.....
Belgium	428,605	291,990	74,675
Scotland	361,150	360,070	6,025
Malta	340,250	285,250	.....
Korea	339,779	306,075	121,130
Canary Islands	320,000	220,000	330,000
Austria	252,000	515,000	.....
Honolulu	129,025	156,975	202,030
Egypt	121,200	37,000	32,500
North Africa	80,000	10,850	.....
Denmark	75,000	587,350	1,199,080
Siberia	62,300	750	.....
Portugal	53,700	37,300	.....
Guam	44,000	28,100	22,000
Norway	30,000	.....	.....
United States	29,570	82,175	231,206
Arabia	22,025	21,475	.....
Switzerland	18,000	4,375	318,629
Russia	14,054	.....	11,280
Turkey	11,000	.....	.....
New Guinea	2,100	23,509	.....
East Africa	111	3,125	.....
Morocco	.....	30,000	.....
Samoa Islands	.....	10,000	.....
Persia	.....	5,000	.....
Central Africa	.....	1,600	.....
Africa	.....	.....	162,632
Guatemala	.....	.....	6,000
Total	115,768,509	117,766,660	94,341,542

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The following comparative table shows for the fiscal years 1906, 1907, and 1908 the number of cigars manufactured and consumed in the islands, the number manufactured and exported, and the grand total manufactured, whether for foreign or local consumption:

Fiscal year.	Cigars manufactured and—		Total.
	Consumed in the Philippine Islands.	Exported to other countries.	
	Number.	*Number.*	*Number.*
1906	74,184,537	94,341,542	186,526,079
1907	79,476,459	117,766,660	197,243,119
1908	82,986,278,	115,768,509	198,754,787

CIGARETTES.

The taxes collected on cigarettes removed from the factories for domestic consumption amounted to ₱2,534,657.38, as compared with ₱2,360,485.49 for the fiscal year 1907, an increase of ₱174,171.89, or about 7½ per cent.

The following table shows the total number of cigarettes exported to other countries, free of tax, during the fiscal years 1906, 1907, and 1908:

Country to which exported.	Total exports for the fiscal year—		
	1908.	1907.	1906.
	Number.	*Number.*	*Number.*
China	40,706,017	152,506,287	18,347,177
Korea	23,115,762	240,000	155,250
India	2,931,125	675,654	163,450
Indo-China	1,390,400	91,904	240,280
Japan	1,136,500	20,548	17,828
High seas	1,065,375	562,500	622,449
Straits Settlements	1,004,255	1,737,100	705,336
England	223,225	307,682	25,950
Siam	191,820	1,567,500	.....
Guam	171,000	210,000	165,000
New Guinea	126,100	91,750	.....
Java	60,400	.....	85,500
Australia	57,952	120,335	97,278
Holland	37,500	3,000	.....
Italy	33,600	.....	.....
Egypt	30,000	.....	.....
Siberia	21,600	.....	450
France	20,000	3,000	100,000
New Zealand	15,305	4,200	.....
United States	11,800	4,500	135,984
Spain	9,075	9,269	54,400
Scotland	8,000	.....	.....
Germany	7,700	59,508	56,062
Belgium	7,500	92,000	22,500
Switzerland	5,000	.....	4,200
East Africa	240	.....	.....
South America	145	.....	63,750
South Africa	.....	40,000	.....
Gibraltar	.....	2,500	.....
Denmark	.....	575	.....
Total	72,387,396	158,349,812	21,062,844

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The total number of cigarettes manufactured, the number of those consumed, and the number of those exported to other countries during the fiscal years 1906, 1907, and 1908, is shown by the following comparative table:

Fiscal year.	Cigarettes manufactured and—		Total.
	Consumed in the Philippine Islands.	Exported to other countries.	
	Number.	*Number.*	*Number.*
1906	3,509,038,750	21,062,844	3,530,101,594
1907	3,509,999,575	158,349,812	3,668,349,387
1908	3,774,303,310	72,387,396	3,846,690,706

MATCHES.

The tax collected on matches amounted to ₱282,687, as compared with ₱275,656.91 for the fiscal year immediately preceding, an increase of ₱7,030.09, or 2½ per cent. Of the matches required for local consumption 31 per cent were imported from Japan and 69 per cent were of domestic manufacture, as compared with 38 per cent of imported matches and 62 per cent of domestic matches during the fiscal year 1907, and 42 per cent of imported matches and 58 per cent of domestic matches during the fiscal year 1906. This shows that the production of the only match factory in these islands is constantly increasing and the importation of matches is decreasing. The output of that factory increased 15 per cent over that for the fiscal year 1907. The matches imported, as compared with the fiscal year 1907, show a decrease of 17 per cent.

LICENSE TAXES.

DEALERS IN ALCOHOL AND TOBACCO PRODUCTS.

Dealers in alcohol and tobacco products paid ₱502,183.93, as compared with ₱511,358.68 during the fiscal year 1907. Of the total amount collected for the fiscal year 1908, 50 per cent was paid by dealers in distilled and manufactured liquors; 33 per cent by dealers in tobacco products; 9 per cent by dealers in beer; and 8 per cent by manufacturers and peddlers of liquors or tobacco.

MERCHANTS, MANUFACTURERS, AND COMMON CARRIERS.

The percentage taxes collected from them amounted to ₱1,305,313.70, as compared with ₱1,374,245.97 during the fiscal year 1907. Of the amount collected during the fiscal year ended June 30, 1907, 93 per cent was paid by merchants; 6 per cent by manufacturers; and 1 per cent by common carriers. The falling off in the taxes

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from merchants and manufacturers was ₱68,280.91, or 5 per cent. as compared with the receipts for the fiscal year 1907. This is no doubt due to the decrease in the purchasing power of the people, caused by the shortage in the rice crop and the low prices of hemp during the year. In the 11 principle rice and hemp producing provinces the decrease in collection was over 17 per cent during the fiscal year 1907, while in the principal sugar producing provinces there was an increase of 5 per cent.

OCCUPATIONS, TRADES, AND PROFESSIONS.

The amount of ₱417,180.40 was collected on occupations, trades, and professions, which under the law are required to pay license taxes. The amount collected for the preceding fiscal year was ₱380,172.72. Of the amount collected, 72 per cent was paid by proprietors of cockpits; 14 per cent by lawyers, doctors, civil engineers, and surveyors; and 14 per cent by all other occupations, trades, and professions, for which a license tax is required by the internal-revenue law.

CEDULAS.

The amount collected from the sale of cedulas, or certificates of registration, was ₱3,285,479 as compared with ₱1,919,705 for the preceding fiscal year. This represents an increase of ₱1,365,774, and is due principally to the double cedula tax of ₱2, instead of ₱1, imposed for the calendar year 1908 by the provincial boards of 28 provinces, under the provisions of Act No. 1652, enacted by the Philippine Commission, on May 18, 1907. For the calendar year 1908 about 85 per cent of the cedula-paying population has in this manner been made subject to the increased cedula tax. There were 34,790, or about 2 per cent, more cedulas sold during the fiscal year 1908 than during the preceding fiscal year, and this increase is due chiefly to the increase in the population. Over 89 per cent of cedulas sold during the year were without delinquency charges added.

DOCUMENTRY STAMP TAXES.

The sale of documentary stamps produced a revenue of ₱182,725.40, as compared with ₱181,136.96 for the fiscal year 1907.

TAXES ON MINES AND MINING CONCESSIONS.

There were collected as percentage taxes on the output of mines held under Spanish concessions ₱329.28, as against ₱2,140.19 during the fiscal year 1907. It having been decided by the supreme court of the islands that such taxes imposed by law are invalid and unconstitutional, in a case brought against the government by a grantee of Spanish mining concessions, for the recovery of the amount paid by him, in accordance with a provision of the internal revenue law, the enforcement of that provision was suspended during the early part of 1907.

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BANKS AND BANKERS AND INSURANCE COMPANIES.

The collection for taxes on deposits, capital employed, and circulation of banks amounted to ₱167,892.02, as against ₱141,606.78 for the preceding fiscal year. The amount collected on the premiums received by insurance companies was ₱19,456.11, and ₱20,599.06 for the preceding fiscal year.

FOREST PRODUCTS.

Taxes collected on timber and minor products removed from the public forests and forest reserves amounted to ₱211,570.62, as compared with ₱191,079.79 for the preceding fiscal year.

SUMMARY OF COLLECTIONS.

The total collections under Act No. 1189, since its enactment, were as follows:

August 1, 1904, to June 30, 1905	₱5,200,383.95
July 1, 1905, to June 30, 1906	8,803,356.91
July 1, 1906, to June 30, 1907	9,432,095.52
July 1, 1907, to June 30, 1908	11,084,044.36

Reports of collection during the month of July, 1908, show that the amount collected during the month was ₱896,090.11. The total collections of revenue taxes during the four full years' operation of the law, therefore, were ₱35,415,970.85. Of this amount, 20 per cent was paid on the manufacture and sale of distilled spirits and fermented liquors, 34 per cent on the manufacture and sale of tobacco products, and 46 per cent on the several other businesses, occupations, trades, etc., taxed by the provisions of the law. The internal-revenue law was only partially in operation between August 1 and December 31, 1904.

OPIUM LAW.

On October 10, 1907, the Philippine Commission passed Act No. 1761, by which the prohibition contained in paragraph 80, section 11, of the Philippine tariff revision law of March 3, 1905, that after March 1, 1908, it shall be unlawful to import into the Philippine Islands opium, in whatever form, except by the government, and for medicinal purposes only, was made effective.

Act No. 1761 provides that on or after March 1, 1908, it shall be unlawful for any person to hold or to have in his possession or under his control or subject to his disposition any opium, cocaine, alpha or beta eucaine, or any derivative or preparation of such drugs or substances. It provides, however, that government bureaus or officers of the government duly authorized by law or designated in writing by the governor-general may have, hold, and dispose of any such drugs or substances in accordance with law; and that duly licensed and practicing physicians, pharmacists, and second-class pharmacists, or persons holding and having such drugs and substances on the pre-

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scription of a duly licensed and practicing physician, may have, hold, possess, and dispose of such drugs and substances for medicinal purposes only.

It provides also that on or after March 1, 1908, it shall be unlawful for any person in the Philippine Islands to inhale, smoke, chew, swallow, inject, or otherwise use or permit to be used in or on his body any opium, except for medicinal purposes, and then only upon prescription of a duly licensed and practicing physician.

The violation of said provisions is made punishable by a fine not to exceed ₱10,000, or by imprisonment not to exceed five years, or by both such fine and imprisonment, in the discretion of the court; and in case of the commission of a second offense under said provisions, the person so convicted, if other than a citizen of the United States or of the Philippine Islands, may, by order of the court, be deported.

The passage of this act has to a considerable extent reduced the customs receipts on the importation of opium, and since March 1, 1908, has cut out entirely the internal-revenue collections on opium dispensaries and on confirmed users' certificates.

The collector of internal revenue was charged with the enforcement of said Act No. 1761.

For further and more complete details of the operations of the bureau of internal revenue, reference is hereby made to the report of the collector of internal revenue, which is hereto annexed, made a part of this report, and marked "Exhibit No. 4."

Respectfully submitted.

GREGORIO ARANETA,
Secretary of Finance and Justice.

To the PHILIPPINE COMMISSION,
Manila, P. I.

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EXHIBIT No. 1.

REPORT OF THE ATTORNEY-GENERAL.

BUREAU OF JUSTICE,
Manila, P. I., August 8, 1908.

SIR: In compliance with requirements of the provisions of section 1 of Act No. 1824 I have the honor to submit herewith the annual report for the judiciary and bureau of justice for the fiscal year ended June 30, 1908.

The writer has succeeded to the task of rendering this report, having assumed the office of attorney-general on July 13, 1908, as successor of the Hon. Gregorio Araneta, who was attorney-general from July 16, 1906, to June 30, 1908.

The changes in the judiciary and the bureau of justice during the past fiscal year have been few, and consist chiefly in the reestablishment of the office of the reporter of decisions of the supreme court by the passage of Act No. 1675, amending sections 30, 31, and 32 of Act No. 136, and another change, which has resulted in much good, the reorganization of the third, eighth, fifteen, and Mountain judicial districts by the passage of Act No. 1708.

Comment on these changes, as well as a report on all others affected, will be made under their appropriate subheads.

In order to permit a ready comparison of the statistics of the fiscal year just ended with those submitted in the last annual report of this bureau, the arrangement of the preceding report will be followed as closely as practicable.

THE WORK OF THE COURTS.

SUPREME COURT.

The report submitted by the clerk of the supreme court covering the work of that court is quoted below in full, and opposite each item reported on in the preceding year is the figure furnished for that period, to facilitate an immediate comparison of the two.[a]

From these figures it will be seen that the number of cases filed last year was slightly above that of the preceding year, and that the cases decided and otherwise disposed of were in excess of those for the preceding twelve months, so that at the close of business on June 30, 1908, there were only 502 civil and 228 criminal cases pending decision, a total of 730, against 513 civil and 343 criminal, a total of 856 cases, or 125 less than at the beginning of the past fiscal year.

The number of American candidates for admission to the bar were only 2, as against 9 for the fiscal year 1907, while 138 Filipinos were candidates for admission at the same examinations, or 15 more than in the preceding year, and of the candidates only 1 American and 20 Filipinos succeeded in passing, against 5 of the former and 21 of the latter during the preceding fiscal year.

No changes occurred among the justices of the supreme court.

On March 30 the court adjourned for its annual vacation, and Mr. Justice Torres remained on duty as the vacation judge. Justices Johnson, Carson, and Tracey sailed for the United States and Justice Willard spent his vacation in Europe and Australia. The three last-named justices returned to duty July 13, 1908, but Justice Johnson will not return until about October 1, as he was granted the six months' vacation allowed by law.

COURT OF FIRST INSTANCE OF MANILA.

The report submitted by the clerk of court of first instance of Manila is given below in full, as follows:[a]

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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Comparing the amount of civil work performed in the Manila courts with the cases filed and acted upon during the preceding fiscal year, it will be seen that on July 1, 1907, there were pending 443 ordinary and 560 probate cases, a total of 1,003, against 637 and 678, respectively, a total of 1,315 cases on June 30, 1908, or an increase of 312. It should be noted in this connection that a less number of civil cases were filed than during the preceding fiscal year, the figures being 848 against 923, or 75 less. As an arrangement is now being made by the judges of the court to expedite the disposition of probate cases, there is no doubt that they will be able to dispose of civil business much more rapidly in the future than has been permissible heretofore.

As to the criminal docket the court is in much better condition, and at the close of the fiscal year only 111 cases were pending. This number, though, is nearly double that of the preceding year, but is accounted for partly by the fact that more cases were filed during the past year than during the preceding year ended June 30, 1907.

The customs appeal cases have been well taken care of, there being only 18 cases pending at the close of the year, against 79 the year before. From the report of the clerk it appears that more attention should be paid to civil cases, and in order to keep abreast of the business it will be advisable to assign an additional judge for duty in that court for some time. The probate work is certainly in need of attention, and if a fourth judge should be ordered to duty in the Manila court, it would seem to be to the public interest that he should give special attention to this class of cases. It is recommended that a judge at large be assigned to the Manila court for this special duty.

The collections were ₱30,283.30, as compared with ₱29,954.75 for the previous year.

There have been few changes in the court personnel. On April 15, Judge A. S. Crossfield left the islands on leave of absence for the United States, and during the remainder of the term Judge Charles H. Smith presided over his sala. Judge Lobingier returned in December, having left the islands July last under authority contained in Act No. 1660. On May 1, 1908, Judge Lobingier was assigned to special duty with the compilation committee, to supervise the annotation of the codes of the islands, and in order to expidite the same as much as possible was authorized to work during May and June in the cooler climate of Baguio.

During the court vacation months of May and June, Judge Araullo held court from May 1 to 31, and was assisted during the close of that month by Judge James Ross, of the twelfth judicial district. On June 1 the former was relieved from duty on account of illness, the latter was ordered to hold a special term of court in the ninth judicial district, and Judge Powell, of the seventh judicial district, presided over said court during the entire month of June.

In case the recommendation to assign a fourth judge to Manila is adopted, it will be necessary to authorize the appointment of an additional stenographer and an interpreter.

COURTS OF FIRST INSTANCE IN THE PROVINCES.

As in the preceding fiscal years, this office required the clerks of the various courts of first instance to submit annual reports showing the business transacted in each. After careful tabulation the following table shows the work of each of the courts of first instance throughout the provinces.[a] As proposed in the report of the preceding year, the clerks were directed to segregate probate matters from other civil business pending at the close of this fiscal year.

Comparing the present statistics with those of the preceding year, the following facts are shown:

On July 1, 1907, there were pending 2,991 civil cases, including probate matters, as compared with 2,404 ordinary civil and 1,200 probate cases, a total of 3,604 at the close of this fiscal year, an increase of 613 cases. In the preceding fiscal year there were filed 2,557 civil cases, as compared with 3,044 during the last year, and there were tried 1,316, as compared with 1,520. It will thus be seen that while more cases were tried in the past fiscal year than during the one preceding, still the amount of civil business is increasing.

Comparing the reports as to criminal business, we find that on June 30, 1907, there were pending 1,198 cases, as compared with 1,628 at the close of this fiscal year; that 3,340 were filed, as compared with 4,516, and that 2,393 were tried,

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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as compared with 2,776. As the number of cases filed was 1,200 more than that of the preceding year, and the number of cases pending was only 500 more for the same period, it will be seen that the courts are keeping ahead of their work. The district having the largest amount of work pending at the close of the last fiscal year was the third, and in order that an explanation of the causes of the heavy dockets pending might be brought to your attention, this office requested from the judge thereof a statement showing the causes of the same, and the following is his reply:

"The increase of business pending at the close of this fiscal year over that of last year results from several causes:

"1. The main cause is that an unusually large number of cases, civil and criminal, were filed during the year ending in 1908. There were 73 more civil and 167 more criminal cases filed in the fiscal year ending June 30, 1908, than in the previous year.

"2. During my absence in the States last year there was only one month of court held in this province from the 1st of July till the 1st of November, instead of the usual two and one-half months; and upon my return, in the latter part of October, the jail was crowded with prisoners awaiting trial.

"3. Early in November the provincial fiscal suddenly became seriously ill and unable to do service, and a leave had to be granted him, which necessarily interfered with the progress of criminal trials until his return, on the 1st of January.

"4. There were an unusual number of important and lengthly investigations of charges against the justices of the peace.

"5. There were 14 election contests disposed of, one of which required a week to try, and the others more or less time; besides, there was a conspiracy case, which 25 defendants strenuously defended, that consumed ten days in its trial.

"Again, in this year there were tried some 25 or 30 cases of robbery in band, homicide, and assassination that necessarily consumed much time.

"It will be noted, however, that while there are more cases pending at the close of this fiscal year than were pending at the close of the fiscal year ending June 30, 1907, there were 43 more cases, criminal and civil, disposed of in the latter than in the former year.

"The fiscal states that most of the criminal cases now pending are of a trivial nature, the bulk of the lengthy cases having been disposed of.

"Of the civil cases now pending, 154 are administration cases; and there are not a great many civil cases of importance or in which the parties are seeking a trial. It is believed that both the civil and criminal dockets can be pretty well cleared up during the next five months, notwithstanding their apparent length.

"My policy heretofore has been to give preference to jail cases and the civil cases in which the parties or their counsel desire a trial. This plan results in leaving a larger number of cases untried, but those of a less important character.

"In the near future, however, it is my purpose to try to speedily rid the calendar of a great many of the old cases in which the parties are taking little or no interest by dismissal or otherwise. Few of them are represented by attorneys, and in many of them the parties can not be found.

"J. C. JENKINS,
"*Judge, Third Judicial District.*"

Accompanying the report of the Cebu court the following was submitted by the clerk of court:

"Referring to the report mailed by me June 30, 1908, showing the business of this court during the fiscal year beginning July 1, 1907, to June 30, 1908, I desire to add the following explanatory note as part thereof:

"Owing to the fact that many of the lawyers of Cebu were candidates for the Philippine assembly, and afterwards members thereof, civil business, as far as the trial of cases was concerned, suffered a partial paralysis, and of the number of cases pending on June 30, 1908, but a small proportion (61) were actually ready for trial at that date.

"Very respectfully,
PASTOR SALÓ,
"*Clerk Court of First Instance of Cebu.*"

Following the recommendation of this office, the Commission reorganized the third, eighth, fifteenth, and mountain judicial districts by the passing of Act No. 1708. The reorganization consisted in taking the province of Union from the third district and combining it with the mountain district, and the

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province of Sorsogon from the eighth district and combining it with the fifteenth district. These changes have had the result of more nearly equalizing the work of these four districts, and will enable the judges of the third and eighth districts to keep their dockets in better condition than heretofore.

The amount of fees, fines, and court costs collected was ₱115,390.31, as compared with ₱181,654.72 during the preceding fiscal year. This reduction in the collections was due to the fact that in prior fiscal years the clerks collected large sums from the provinces for criminal cases, and as such fees were practically abolished by Act No. 1764, which only took effect on October 11, 1907, a still further reduction in this source of income for the appropriation for the judiciary may be expected for the fiscal year 1909.

The changes in the personnel of the judiciary during the fiscal year were few and consisted of the following: Hon. Henry C. Bates, judge of the ninth judicial district, resigned on August 6, 1907, and returned to his home in the United States. The honorable William F. Norris was transferred from the twelfth to the ninth judicial district, and the honorable James Ross, one of the judges at large, was appointed judge of the twelfth judicial district. This vacancy was filled by the appointment of the honorable Juan C. Sumulong as judge at large on August 7, 1907. Judge Sumulong has been one of the leading members of the Philippine bar for a number of years.

With the beginning of the court of first instance vacation on May 1, 1908, Judges Norris, of the ninth district, Jocson, of the tenth district, and Avancefia, of the thirteenth district, were granted leaves of absence for five months, and departed for their homes in the United States or on trips through Japan.

The usual number of changes occurred among clerks of court, stenographers, interpreters, escribientes, typewriters, and messengers. In general the clerical forces of the courts are doing good work and with increased experience are becoming more proficient.

JUSTICE OF THE PEACE COURTS.

As section 2 of Act No. 1627 requires that justices of the peace shall submit their annual reports direct to their respective district judges instead of to the attorney-general, and as each judge is then required to submit his report to the secretary of finance and justice, this office made no effort to collect data from any justice court.

The work as required by section 28 of Act No. 1627 of supplying all courts of justices of the peace with blank forms and necessary supplies is performed by the bureau of justice. This work has involved an immense amount of labor, and the system which this bureau was compelled to adopt in order to comply with the law is not considered satisfactory. It is impossible for the attorney-general to supervise the expenditure of supplies used by more than 600 justices scattered throughout the entire Archipelago and secure the economical working of the law. Justices of the peace are being continually changed and, as little care seems to be taken by most of them of the blank forms and stationery supplies, the waste is believed to be heavy. This office is of the opinion that the only way this account can be controlled or safeguarded is by having provincial or municipal treasurers supply the justices of the peace with the necessary articles. The bureau of printing should continue printing the necessary forms, and said treasurers could make requisition direct for the amounts they require through the usual channels. Instead of the justices making requisition upon this bureau for their equipment, such as pens, ink, writing paper, etc., there is no question but that greater economy and better service would be secured by having the local treasurers purchase and supply the same for the justices from their local markets. However, if it is intended to have this bureau continue performing this work, it will be necessary to supply an additional clerk. The Commission has made scant provision for clerical service in this matter and the bureau will be compelled to detail part of its already crowded office force to do this work in the best manner possible until additional help can be provided. An average of twenty-five requisitions are received each day from justices of the peace, and to check and rearrange these is a heavy task for which adequate clerical force should be provided.

COURT OF LAND REGISTRATION.

The following is the report submitted by the clerk of the court of land registration, Mr. A. K. Jones, and is quoted in full without comment.

There have been filed 901 applications during the year. Up to July 1, 1907, the total number filed since the organization of the court was 3,526, while the

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total on July 1 of this year amounts to 4,427, the average per month being about 75 cases, filed as follows:

Albay	11	Mindoro	7
Antique	0	Misamis	0
Ambos Camarines	1	Moro	30
Agusan	0	Negros Occidental	57
Bataan	3	Negros Oriental	0
Batangas	12	Nueva Ecija	45
Benguet	4	Nueva Vizcaya	0
Bulacan	76	Pampanga	26
Bohol	57	Pangasinan	23
Cagayan	8	Paragua	0
Capiz	6	Rizal	48
Cavite	7	Samar	10
Cebu	41	Sorsogon	7
Ilocos Norte	9	Surigao	3
Ilocos Sur	2	Tarlac	23
Iloilo	18	Tayabas	43
Isabela	10	Union	0
Laguna	48	Zambales	5
Lepanto Bontoc	0		
Leyte	35	Total	901
Manila	226		

The value of the property as represented in the above applications amounts to over ₱11,000,000, making a total value as represented in all applications received since the organization of the court of about ₱51,000,000.

The following is a statement of the cases considered by the court during the year:

Number of sessions:	
Manila	427
Provinces	272
Total	699
Cases decreed:	
Final	708
Pending appeal	45
Appealed	15
Cases denied:	
Final	17
Pending appeal	3
Appealed	9
Cases dismissed	31
Cases pending	1,516
Total	2,344
Cases previously disposed of	2,083
Total	4,427
Cases opposed	302
Written oppositions	532
Oppositions sustained	34
Oppositions denied	297

In comparison with the preceding year, it will be noticed that although a less number of applications have been filed, the court has disposed of a larger number of cases than it has during any year since its organization. This is attributed to the assistance rendered by the courts of first instance, in relieving this court of the taking of testimony in nearly 400 cases from the various provinces, prepared and sent them for that purpose, as provided by Act No. 1648 as amended.

In view of the number of cases pending, which includes many in which the testimony has been taken, and the prospect of a larger increase than has ever been experienced before, it is thought that at least two, if not three, additional regular judges should be appointed as it will be impossible—the two first instance

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judges assigned to this court being relieved at intervals—for the regular judges to keep abreast of the work.

In this connection attention is also invited to the fact that it will be necessary in the very near future to call upon the municipal board of Manila for additional space. With the increase of business must necessarily follow an increase of personnel, and it is with difficulty, on account of the crowded condition, that the present force is able to perform the duties required of it.

REGISTER OF DEEDS.

The duties of register of deeds, with the exception of the city of Manila, for which there is a register of deeds appointed, and of the provinces of Benguet, Nueva Vizcaya, Lepanto Bontoc, Zambales, Palawan, and Agusan, in which the duties thereof are performed by the respective provincial treasurers in accordance with the provisions of Act No. 1699, have been taken over by the provincial fiscals. Prior to the going into effect of said act these duties were performed principally by the provincial treasurers and, as they were not lawyers, the substitution has proved eminently more satisfactory to the court, as well as beneficial to the public.

Following is a table showing, by provinces, the area of the land registered since the organization of the court:

Province.	Area in hectares.	Province.	Area in hectares.
Albay	280.2029	Mindoro	28,060.7669
Agusan		Misamis	.2426
Ambos Camarines	231.4494	Moro	389.7133
Antique	1.5933	Negros Occidental	24,687.6624
Bataan	95.1947	Negros Oriental	.1678
Batangas	28,748.6020	Nueva Ecija	13,491.0142
Benguet	32.5568	Nueva Vizcaya	
Bulacan	2,587.5382	Pampanga	5,923.0180
Bohol	70.6321	Pangasinan	3,946.7327
Cagayan	4,039.4847	Palawan	
Capiz		Rizal	15,667.0125
Cavite	193.3417	Samar	7.1885
Cebu	1,136.5193	Sorsogon	1,449.9810
Ilocos Norte	7.8350	Surigao	.6395
Ilocos Sur	.1475	Tarlac	3,527.4683
Iloilo	1,075.7470	Tayabas	245.5939
Isabela de Luzon	2,575.7470	Union	42.3616
Laguna	139.5502	Zambales	393.7805
Lepanto Bontoc			
Leyte	92.1555	Total	135,018.5307
Manila	823.0343		

REPORTER OF THE SUPREME COURT.

The office of the reporter of decisions of the supreme court was created by Act No. 1675. Mr. D. L. Cobb was appointed to the position, and began operations on August 1, 1907.

The current system of reporting was initiated by the present reporter while chief of the legislative division of the executive bureau, at which time there was but one volume of opinions published. All cases selected by the court have now been reported and the decisions are brought down to date. They consist of 20 volumes, 10 in English and 10 in the Spanish language. Volume X will be ready for distribution in August of the current year.

Commencing with Volume IX all cases decided by the court during the period covered by the respective volumes are included therein, and those not reported in full are summarized and embraced in notes for general convenience. As the regular work of the office permits, a preliminary skeleton-digest of the 20 volumes is being prepared for the convenience of the court.

The Official Gazette.—The Official Gazette is also compiled and issued by the reporter of the supreme court and contains the official matter which the law provides shall be published therein. During the past year the official notices of the court of land registration were also published in the Official Gazette, as prescribed by Act No. 1678. The distribution and sale of the Official Gazette is attended to by the bureau of printing, under Act No. 1407.

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Public laws.—Volume VI of the public laws, containing Acts No. 1537 to Act No. 1800, inclusive, has been compiled and issued. The next volume of the statutes will begin with the first act enacted by the Philippine Legislature, consisting of the Philippine Commission and the Philippine Assembly.

OFFICE OF THE ATTORNEY-GENERAL.

The following figures show in brief the general work performed in the attorney-general's office during the fiscal year just closed.[a]

ADMINISTRATION OF ESTATES OF DECEASED EMPLOYEES.

During the past fiscal year the number of deaths of American employees of the insular government showed a slight decrease from that of the preceding year. Twenty-seven deaths have been reported and, of that number, twenty-four estates have been or are now being administered by this office. In two of the remaining estates administrators were appointed by the court of first instance and in the other case, that of the late Henry M. Ickis, a petition will be filed at an early date asking that an administrator be appointed by the court.

The fifteen old estates mentioned in the last annual report as pending settlement at that time because of the inability to locate relatives of decedents have all been settled by the payment of the amount of such estates to the province and municipalities wherein the decedents last resided, as provided in sections 750–752 of Act No. 190.

The names of the decedents, the province or municipality thus benefited, with the amount in each case, are as follows:

Province of Benguet:		
J. H. Reuman	₱93.00	
H. Fernandez	285.33	
George Reichel	50.00	
J. T. McCluskey	180.75	
J. L. Tate	40.50	
John Stein	78.00	
Arthur C. Decker	26.00	
F. H. Hamilton	28.80	
		₱782.38
Zamboanga, Mindanao: John McCullough		24.00
Dapitan, Mindanao: Cecil E. Hendrix		375.12
City of Manila:		
J. D. Turner	₱147.74	
George Gardner	426.64	
James D. Garvey	1,238.05	
John White	200.10	
Harry W. Bush	22.15	
		2,034.68
Total		3,217.08

The total amount received during the fiscal year on account of estates was ₱17,974.26.

The total amount disbursed during the same period in settlement of all expenses of administration, outstanding liabilities of decedents, and payments made to relatives and heirs in settlement of estates was ₱21,881.76.

The balance on hand from all sources to the credit of estates pending settlement on June 30, 1908, was ₱6,114.11.

The resolution of the Philippine Commission, dated December 7, 1906, the benefits of which were commented on in the last report, ceased to be effective on the passage of Act No. 1698. It provided that "where a regularly appointed employee of the permanent service is separated therefrom because of death, lack of work, or abolishment of his position, and through no fault of his own, he should be allowed such accrued leave as he may have earned for the time served and the traveling expenses incurred by him, as well as half salary earned en route from the United States to the Philippine Islands,

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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which would have been payable had he been permitted to render two years' service required by paragraph (a), section 2, and paragraph (a), section 9, of Act No. 1040, * * *." No such provision was made in the new Civil Service Act No. 1698, and the lack thereof would seem to work a hardship in some cases. The case which is most distinctly recalled at this time is that of the late Milton E. Rouzee, a former employee of the bureau of printing. Mr. Rouzee had taken accrued leave of absence and visited the United States after having served for more than three years in the islands, and had returned and served about twenty-two or twenty-three months, when he was taken ill, of which illness he subsequently died. Under the provisions of Act No. 1698 no allowance could be made to his estate on account of expenses incurred on his return to the islands after the expiration of his leave spent in the United States.

The names of employees who died during the fiscal year 1908, dates of death, and the bureaus in which they were employed are as follows:

Name.	Date of death.	Where employed.
A. J. Storm	July 5, 1907	Bureau of public works.
Fred C. Little	Aug. 8, 1907	Bureau of supply.
Frank A. Moore	Aug. 23, 1907	Bureau of lands.
Geo. W. Beach	Aug. 31, 1907	Bureau of public works.
Harold Liebmann	Sept. 3, 1907	Do.
Wm. F. Lytle	Sept. 20, 1907	Do.
Clarence F. Chaplin	Sept. 29, 1907	Bureau of internal revenue.
Waldo B. Williams[a]	Oct. 8, 1907	Bureau of constabulary.
Milton E. Rouzee	Oct. 27, 1907	Bureau of printing.
Arthur G. Crane	Nov. 12, 1907	Bureau of education.
John Conrad Ingalls	....do.....	City of Manila.
Carl C. Bonner	Nov. 27, 1907	Bureau of science.
Frank B. Coyne	Dec. 10, 1907	Bureau of customs.
Ralph A. Hogue	Dec. 13, 1907	City of Manila.
E. H. Glazier	Dec. 16, 1907	Bureau of public works.
John A. Traw	Jan. 5, 1908	Bureau of navigation.
Mace L. Williamson	Jan. 17, 1908	Bureau of posts.
Anna E. Hahn[a]	Jan. 29, 1908	Bureau of education.
E. G. Weber	Feb. 27, 1908	Bureau of audits.
Emery C. Lowe	Feb. 29, 1908	Bureau of education.
Earl L. Tatum	Mar. 29, 1908	City of Manila.
W. J. Duncan	Apr. 3, 1908	Bureau of education.
Edwin C. Jones	Apr. 7, 1908	Bureau of printing.
John J. Hartman	May 4, 1908	City of Manila.
Henry M. Ickis[b]	About Apr. 1 1908.	Bureau of science.
F. D. Shiras	June 12, 1908	Bureau of lands.
Clarence J. Jones	June 23, 1908	Province of Pangasinan.

[a] Administrator appointed by court.
[b] Petition will be filed for appointment of administrator by the court as soon as sufficient evidence of his death is received to justify such action.

The military authorities have rendered every possible assistance in the transportation of personal effects, remains, and families of deceased employees to the United States. In several instances the services of the burial corps of the United States Army have been requisitioned for the purpose of removing remains from the provinces to Manila and preparing same for shipment to the United States. Such services have always been willingly granted and are performed in conjunction with the regular work of the corps. Reimbursement of all expenses incurred on account of such services is made in each case from funds of the estate of decedent, or furnished by relatives in the United States at whose request the removal is made. The services above mentioned tend greatly to facilitate the administration of many of the estates as well as to reduce the expenses incident thereto.

The writer closes this report without making any comment on the changes which have occurred in the judiciary and bureau of justice since the close of the fiscal year and up to the date this report is submitted, leaving such statement for the annual report covering the period in which such changes became effective.

Very respectfully,

IGNACIO VILLAMOR,
Attorney-General.

THE SECRETARY OF FINANCE AND JUSTICE,
Manila, P. I.

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EXHIBIT No. 2.

REPORT OF THE INSULAR TREASURER.

OFFICE OF THE TREASURER OF
THE PHILIPPINE ISLANDS,
Manila, P. I., October 23, 1903.

SIR: In compliance with Act No. 1824 of the Philippine Legislature and Act No. 938 of the United States Philippine Commission, as amended, I have the honor to submit the following report covering the operations of this bureau for the fiscal year ended June 30, 1908:

The following statement shows the cash balance on hand at the close of the fiscal year 1908, and the receipts, withdrawals, and currency exchanges during the period July 1, 1907, to and including June 30, 1908:

	Philippine currency.		Local currency.	
GENERAL FUNDS.				
Balance on hand at close of business June 30, 1907		₱20,613,747.875	Pfs. 65,910.09	
Receipts during the fiscal year, account of—				
Customs	₱17,379,717.68			
Internal revenue	6,386,403.94			
Miscellaneous	19,078,634.71			
City of Manila	2,518,699.00			
City of Manila (internal-revenue account)	14,049.75			
Repayments	10,105,809.51			
Exchanges of currency	59,413,918.30	114,897,232.89	10,442.46	
Total to July 1, 1908		135,510,980.765	76,352.55	Pfs. 76,352.55
Withdrawals during the fiscal year, account of—				
Warrants paid	19,707,930.05			
Check vouchers paid	36,971,461.015		11,474.59	
Currency exchanges	59,382,850.17	116,062,241.235	64,877.96	
Balance on hand at close of business June 30, 1908		19,448,739.53		76,352.55
DEPOSITARY ACCOUNT.				
Balance on hand at close of business June 30, 1907	7,912,526.00			
Deposits during fiscal year	107,912,983.02			
Total	115,825,509.02			
Withdrawals during fiscal year	109,815,268.69			
Balance on hand at close of business June 30, 1908		6,010,240.33		
CERTIFICATE REDEMPTION FUND.				
Balance on hand in fund at close of business June 30, 1907	21,540,708.00			
Certificates issued during the year	₱8,634,000.00			
Certificates retired during the year	11,291,009.00			
Net amount retired during the year	2,657,009.00			
Balance on hand in fund at close of business June 30, 1908		18,883,699.00		
Total funds in hands of insular treasurer at close of business June 30, 1908		44,342,678.86		

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This balance was distributed as follows:

	United States currency.	Philippine currency.
In treasury vaults	$5,418,736.77	₱13,576,382.26
Certified checks on local banks		388,327.53
In authorized depositaries in United States	1,394,232.08	
Deposits in local banks		964,179.60
Special deposits in local banks		2,817,996.11
Special deposits with authorized depositaries in United States	6,484,927.83	
	13,297,896.68	17,746,885.50

The special deposits referred to are funds deposited with depositaries at interest for fixed periods of time, and are as follows:

IN MANILA BANKS.

Postal savings bank funds	₱620,000.00
Rizal monument fund	111,773.89
Franchise deposits	33,000.00
Fidelity deposits	178,369.31
Constabulary pension and retirement fund	83,000.00
Assurance fund, Act No. 496	27,000.00
Conservatory of Music fund	1,007.91
Arrastre fund	77,625.00
Fidelity bond premium fund	145,000.00
Insurance fund	125,000.00
Gold standard fund	800,000.00
General fund	500,000.00
Manila sewer and water bonds, sinking fund	116,220.00
Total	2,817,996.11

IN BANKS IN THE UNITED STATES.

Gold standard fund	$2,306,727.52
General fund	4,034,511.36
Sinking fund for friar lands bonds	101,752.04
Sinking fund for Manila sewer and water bonds	41,936.91
Total	6,484,927.83

DIVISION OF INSULAR DISBURSING OFFICE.

With a view to simplifying the accounting system and of reducing the amount of paper work in connection therewith, the insular government has adopted the "check voucher" for use by all bureaus and offices of said government, and by the city of Manila. The check voucher system was put into effect in some bureaus about October 1, 1907, and gradually extended until it was in use by all bureaus by December 1, 1907. On November 30, 1907, the insular disbursing officer ceased to act as such, the division was abolished, and such employees as were necessary were transferred to the division of banks and currency, where their services were required to enable the treasurer to comply with the law in making examinations of banking institutions, building and loan associations, and fraternal organizations.

The following is a consolidated statement of the division's transactions for the period July 1 to November 15, 1907:

DEBITS.

Bureau credit balances July 1, 1907	₱366,532.08
Receipts by accountable warrants and check vouchers	4,176,269.01
Miscellaneous refunds	3,264.94
Miscellaneous collections	13,469.50
Total	4,559,535.53

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CREDITS.

Bureau debit balances July 1, 1907	₱70,878.41
Disbursed on vouchers July 1 to October 31, 1907	4,154,102.88
Refunds to insular treasury	329,434.24
Transferred to provincial treasurers and United States	5,120.00
Total	4,559,535.53

The following statement shows disbursements by bureaus for the period above stated:

Account.	Number of vouchers.	Amount.	Account.	Number of vouchers.	Amount.
Bureau of agriculture	325	₱78,311.19	Bureau of lands	443	₱146,176.23
Bureau of audits	135	83,106.56	Bureau of navigation	827	1,007,706.36
Bureau of civil service	22	24,227.82	Philippine medical school	17	14,407.66
Bureau of coast and geodetic survey	112	48,892.71	Bureau of printing	101	108,826.75
Consulting architect	4	4,000.00	Bureau of prisons	189	95,385.56
Bureau of customs	291	204,969.82	Bureau of public works	833	243,477.64
Bureau of education	2,841	1,003,758.36	Bureau of science	180	68,384.50
Executive bureau	270	215,701.05	Supervising railway expert	40	9,320.18
Bureau of forestry	147	31,020.06	Bureau of the treasury	328	40,669.72
Bureau of health	1,250	244,626.65	Weather bureau	101	33,453.43
Bureau of internal revenue	597	187,769.92	Total	9,722	4,154,102.88
Bureau of justice	669	250,910.71			

Under the provisions of section 20 of Act No. 1792, United States Philippine Commission, an employee of this bureau was designated to make cash payments of pay rolls in Manila for some of the bureaus until such time as other arrangements could be made.

The following amounts were thus disbursed during the period November 30, 1907, to June 30, 1908:

Bureau of civil service	₱37,418.07
Executive bureau	106,866.77
Bureau of health	10,556.62
Bureau of justice	121,858.96
Bureau of the treasury	42,106.63
Total	318,807.05

The expense of conducting the bureau during the fiscal year 1908 was as follows:

Salaries and wages, fiscal year 1908	₱110,518.76
Salaries and wages for prior fiscal years paid during present fiscal year	41.66
Contingent expenses, such as transportion, office supplies, printing, furniture, insurance, etc., for present fiscal year	16,871.62
For similar contingent expenses incurred during prior fiscal years but paid during present fiscal year	369.77
Total	127,801.81

The sum of ₱341,612.23 was received during the fiscal year for premiums on sale of demand drafts and telegraphic transfers in Manila on New York, and in New York on Manila, and from sale of interisland demand drafts and telegraphic transfers, under Act No. 1636, all of which was credited to the gold standard fund. The foregoing amount shows an increase over the fiscal year 1907 of ₱225,209.11. There was also received the sum of ₱913,096.54 for interest on funds deposited in open account and on fixed deposits with authorized depositaries in the United States.

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The funds carried in the United States, divided among 5 depositaries, and on which interest was received, were as follows:

Name of fund.	Amount of interest received during fiscal year.
General fund	₱431,758.56
Gold standard fund	365,336.82
Manila sewer and water fund	102,571.06
Friar land bonds, sinking fund	9,352.94
Manila sewer and water bonds, sinking fund	4,077.16
Total	913,096.54

The foregoing amount shows an increase over the fiscal year 1907 of ₱314,454.56. No interest has been received on deposits of government funds in Manila.

TRUST FUNDS.

The following trust funds are held by the insular treasurer:

Rizal monument fund, Act No. 243; assurance fund, Act No. 496; sinking fund, Manila sewer and water bonds, Act No. 1323; postal savings-bank fund, Act No. 1493; Philippine constabulary pension and retirement fund, Act. No. 1638; insurance fund, Act. No. 1728; sinking fund, public works and permanent improvements bonds, Act No. 1729; fidelity bond premium fund, Act No. 1739, and sinking fund, friar lands bonds, Act No. 1749.

The following statement shows the balance in each fund at the close of the fiscal year 1907, the receipts accruing thereto, the withdrawals therefrom, and the investments made for each fund:

RIZAL MONUMENT FUND.

Balance in fund July 1, 1907		₱115,512.18
Receipts:		
From subscriptions	₱426.14	
From interest on investments	4,023.18	
		4,449.32
Total		119,961.50
Disbursed during year		581.40
Balance in fund June 30, 1908		119,380.10
Investments:		
Fixed deposits with local banks	₱111,773.89	
In hands of insular treasurer, uninvested	7,606.21	
		119,380.10

ASSURANCE FUND.

Balance in fund July 1, 1907		₱20,882.37
Receipts:		
From fees under section 99, Act No. 496	₱8,834.38	
From interest on investments	630.00	
		9,464.38
Balance in fund June 30, 1908		30,346.75
Investments:		
Fixed deposits with local banks	₱27,000.00	
In hands of insular treasurer, uninvested	3,346.75	
		30,346.75

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MANILA SEWER AND WATER BONDS, SINKING FUND, ACT NO. 1323.

Balance in fund July 1, 1907		₱79,796.66
Receipts:		
From appropriation, Act No. 1323	₱116,220.00	
From interest on investments	4,077.16	
		120,297.16
Balance in fund, June 30, 1908		200,093.82
Investments:		
Fixed deposits with depositaries in the United States	₱83,873.82	
Fixed deposits with local banks	116,220.00	
		200,093.82

POSTAL SAVINGS-BANK FUNDS, ACT NO. 1493.

Balance in fund July 1, 1907		₱495,000.00
Receipts:		
From director of posts		511,015.55
Total		1,006,015.55
Investments:		
Fixed deposits with local banks	₱620,000.00	
From the ₱347,015.55 withdrawn, the following additional investments have been made:		
In Philippine Railway first mortgage 4 per cent gold bonds, par value, ₱260,000, cost	249,515.55	
In first mortgages on improved city real estate	86,625.00	
		956,140.55
In hands of the insular treasurer, uninvested		39,000.00
Deposited with the director of posts on account of partial payments on mortgages		10,875.00
Total		1,006,015.55

During the fiscal year the sum of ₱23,798.33 was collected by the insular treasurer on investments of postal savings-bank funds and deposited with the director of posts. This amount was received from the following sources:

From interest on fixed deposits	₱16,086.01
From interest on bonds	4,000.00
From interest on mortgages	3,712.32
Total	23,798.33

PHILIPPINE CONSTABULARY PENSION AND RETIREMENT FUND, ACT NO. 1638.

Receipts:		
Transferred July 31, 1908, from sections 11 and 14 of Act No. 619	₱101,409.39	
Deductions from pay of officers and enlisted men, under Acts Nos. 619 and 1638	15,704.74	
From interest on bonds	640.00	
From interest on fixed deposits	3,185.00	
		₱120,939.13
Withdrawals:		
Vouchers paid	1,577.69	
By transfer to general fund on account of erroneous deposits	608.00	
		2,185.69
		118,753.44
In hands of collecting officers		2,131.07
Total fund		120,884.51

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Investments:		
Fixed deposits with local banks	₱83,000.00	
Philippine Railway Company first mortgage 4 per cent gold bonds, par value ₱32,000	30,993.76	
In hands of the insular treasurer, uninvested	4,759.68	
In hands of collecting officers	2,131.07	
		₱120,884.51
Outstanding warrants		241.50
Balance in fund June 30, 1908		120,643.01

INSURANCE FUND, ACT NO. 1728.

Receipts:		
From appropriation, Act No. 1728	₱250,000.00	
From interest on loans and fixed deposits	779.58	
From repayments of loans	15,000.00	
		₱265,779.58
Investments:		
Loans to municipalities for public works and improvements	35,500.00	
Loans to provinces for public works and improvements	101,000.00	
Fixed deposits with local banks	125,000.00	
Total investments	261,500.00	
Deposited to credit of fund, account of repayments of loans	15,000.00	
		276,500.00
Excess of investments over amount of fund June 30, 1908		10,720.42

SINKING FUND FOR PUBLIC WORKS AND IMPROVEMENTS BONDS, ACT NO. 1729.

Receipts:		
From appropriation, Act No. 1729		₱404,204.13
Investments:		
Philippine Railway Company first mortgage 4 per cent gold bonds, par value ₱300,000, cost		288,766.66
In hands of the insular treasurer, uninvested		115,437.47
Balance in fund June 30, 1908		404,204.13
Appropriation available but not credited to fund on books of insular treasurer, June 30, 1908		142,848.44
Total		547,052.57

FIDELITY BOND PREMIUM FUND, ACT NO. 1739.

Receipts January 1 to June 30, 1908:		
From appropriation, Act No. 1739	₱122,553.14	
From premiums on fidelity bonds	38,777.39	
From interest on investments	218.75	
		₱161,549.28
Withdrawals January 1 to June 30, 1908		574.47
Cash balance in fund June 30, 1908		160,974.81
Investments:		
Fixed deposits in local banks	145,000.00	
In hands of insular treasurer, uninvested	15,974.81	
		160,974.81
In hands of collecting officers		2,561.75
		163,536.56
Outstanding checks		100.89
Total amount of fund June 30, 1908		163,435.67

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FRIAR LANDS BONDS, SINKING FUND.

Balance in fund November 13, 1907		₱341,787.68
Receipts:		
From appropriation	₱826,686.19	
From sales of land	11,370.61	
From interest on deposits	9,352.94	
From interest on bonds	14,009.04	
From interest on bonds loaned	1,942.26	
		863,361.04
Balance in fund June 30, 1908		1,205,098.72
Investments:		
Fixed deposits with depositaries in United States, $101,752.04	203,504.08	
In Philippine Railway first mortgage 4 per cent gold bonds, par value ₱954,000, cost	916,772.89	
On deposit with depositaries in United States, $3,064.36	6,128.72	
In hands of insular treasurer, uninvested	78,693.03	
Total		1,205,098.72

A short history of the trust funds in the hands of the insular treasurer is given hereunder:

RIZAL MONUMENT FUND.

The collection of this fund was authorized by Act No. 243 of the United States Philippine Commission, the object thereof being to raise funds by popular subscription for the erection of a suitable monument on the Luneta to commemorate the memory of José Rizal, the Philippine patriot, writer, and poet. The collections for this fund cover a period of about five years. In addition to the amount collected by subscription from the Filipino people all over the islands, the insular government donated by Act No. 893 the sum of ₱30,000 to the fund.

A committee of prominent Filipinos was appointed by the act to have charge of the raising of the funds, the expenditure of the same, and all other matters pertaining to the carrying out of the object, their acts, however, being subject to the approval of the governor-general. Sufficient funds having been raised to insure the erection of a suitable monument, the subscription lists were closed December, 1906.

The committee invited eminent artists and sculptors in Europe and America to submit designs for a monument, and as an incentive offered two cash prizes, one first and one second of ₱5,000 and ₱2,000, respectively, for the best designs submitted. A suitable design was selected from the large number submitted by a committee appointed for that purpose. The cost of the monument to be erected is estimated at ₱100,000.

ASSURANCE FUND.

This fund is provided for in section 100 of Act No. 496 (commonly known as the land registration act). A fee of one-tenth of 1 per cent on the assessed value of the real estate is collected by registers of deeds on the original registration of land under the act, and also upon the entry of a certificate showing title as registered owners in heirs or devisees.

There are no other sources of revenue except income from investments of the fund. The object of the fund is to reimburse anyone who may lose title to property registered under the act through adverse decision of a court of competent jurisdiction. Such losses are only to be paid, however, by order of such court under certain conditions provided in the act. Although the law has been in effect almost six years, no claims for reimbursement have yet been made on the assurance fund.

CONSTABULARY PENSION AND RETIREMENT FUND.

This fund is created by Acts Nos. 619 and 1638 of the United States Philippine Commission for the purpose of establishing a fund for the payment of pensions

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to the widows and orphans of members of the constabulary who may lose their lives, or to members who may become permanently disabled in line of duty, and for payment of salaries of officers and compensation of enlisted men upon retirement after twenty years' continuous, actual, and satisfactory service. All fines imposed by courts-martial accrue to this fund, and in addition to the receipts from this source, a deduction is made for the benefit of the fund from the monthly pay of each officer and enlisted man of the force, ranging from ₱3.50 from each colonel down to ₱0.20 from each enlisted man. All income received from investments of the fund is credited thereto.

INSURANCE FUND.

This fund was created by Act No. 1728 of the United States Philippine Commission, and is for the purpose of providing, "so far as possible, the replacing or repairing of government vessels and craft, government machinery, permanent public buildings, and government property therein which shall have been damaged or destroyed by earthquake, fire, lightning, flood, typhoon, tornado, hurricane, or cyclone." There was also provided in the act an initial appropriation of ₱250,000 for the fund and additional annual appropriations of ₱50,000 until the fund shall amount to ₱500,000.

The act further provides that the fund shall be maintained at that amount. In case of loss, a sufficient amount is appropriated to make up such loss and to restore the fund to its original amount, but provides that such appropriation shall not exceed ₱50,000 in any one year. If the loss is in excess of said amount it must be made up from appropriations for succeeding years. All income from investments of the fund is credited thereto.

Section 2 of the act provides that provinces, municipalities, and the city of Manila may obtain insurance in this fund at such rates as may be fixed by the auditor and approved by the governor-general; but no insurance has yet been issued thereunder. No claims for losses or damages have yet been made, although the act has been in effect since September 27, 1907.

The act does not provide for the collection of premiums for insurance on property belonging to the insular government and for which the various bureaus are responsible. Prior to the enactment of the insurance act, many of the bureaus carried insurance on their property, some of which bureaus are in the class designated as "self-supporting." The cost of such insurance was considered a proper charge against the revenues of such bureaus.

It doe not appear reasonable to expect the fund to carry risks involving several millions of pesos for nothing, and particularly so in view of the limited amount in the fund with which to pay any losses which may occur. The risk of loss or damage through earthquakes and typhoons is greater than that of fire, and is a risk not covered in any policy of any fire insurance company represented here. One severe earthquake or typhoon could cause so much damage in a short time that the entire insurance fund would be wiped out of existence for an indefinite period.

It would require fifteen years for the fund to repay the loss of ₱1,000,000 caused by an earthquake or a typhoon, not considering any losses from other sources enumerated in the act, such as fire, lightning, floods, etc.

It is respectfully submitted that the fund is too small for the purpose for which it was created, and it is the opinion of this office that it should be increased as rapidly as possible to at least ₱1,000,000. This can be done by requiring all bureaus which formerly carried insurance on property or buildings to pay into the fund, from their appropriations for maintenance, a premium for the amount of insurance carried on the property of such bureau in this fund, the rate of premium to be paid to be fixed as provided by section 2 of the insurance act. Bureaus designated as "self-supporting" should particularly be required to pay for their insurance. Premiums were formerly paid for such insurance, and as the cost thereof was a legitimate expense of the bureau, there appears to be no reason why it should not be so now.

If it is considered inadvisable to collect premiums from all bureaus for insurance in this fund, which this office strongly recommends, could not a premium be collected from such bureaus as are designated as "self-supporting?" These bureaus make a special charge for supervision on work or for service rendered other bureaus, and it is only equitable and just that they (the self-supporting bureaus) should be charged for services rendered to them.

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FIDELITY BOND PREMIUM FUND.

This fund was created by Act No. 1739 of the United States Philippine Commission, enacted October 3, 1907, to become effective December 31, 1907. The object in creating this fund is to provide "for assurance against losses. shortages, and defalcations by officers and employees accountable for public funds and public property." During the fiscal year 1901 and up to October, 1902, the bonding of accountable officers and employees was done with the Union Surety and Guaranty Company of Philadelphia, which went into liquidation in October, 1902. A contract was then made by the insular government with the American Surety Company of New York and the Fidelity and Deposit Company of Maryland, as joint sureties for this business, and they continued as sureties, under various contracts, until December 31, 1907.

The rate of premium paid by the government for its fidelity insurance was high, averaging over 1 per cent per annum, and as there was no hope of obtaining a lower rate the government decided to carry its own insurance, and the act above referred to was enacted.

Th act provides that the rate of premium to be charged for insurance in this fund shall be fixed by the governor-general, who has fixed it at 1 per cent per annum, one-third of which is paid by the officer or employee bonded and the balance by the insular, provincial, or municipal government by whom the bondee is employed.

The administration and control of the fund were vested in the insular treasurer, who also invests the fund under certain conditions and restrictions provided in the act, with the approval of the governor-general.

The act creating the fund also made an initial appropriation of ₱40,000 for it, and in addition thereto there was transferred thereto the sum of ₱82,553.14 standing to the credit of a reimbursable appropriation from which the bonding companies' premiums had formerly been paid. The total balance in the fund on January 1, 1908, was, therefore, ₱122,553.14, Philippine currency. All premiums received on account of fidelity bonds executed and all income from investments of the fund are credited thereto, and any losses occurring through shortages or defalcations of officers or employees bonded therein are to be paid from the fund.

During the six months the act has been in effect 3,186 bonds have been executed and no demands have yet been made upon the fund for losses of any kind.

However, the period during which the act has been effective is too short to demonstrate the success or failure of the undertaking. The cost of operation of the bonding division is now paid from the appropriation for this bureau and amounts to about ₱6,000 per annum. The receipts from premiums on bonds and income from investments of the fund for the calendar year 1908 are estimated at ₱90,000, and if there are no heavy losses the amount in the fund at the close of the calendar year should approximate ₱200,000. If the fund does reach this amount it is only equitable that the expense of operating the bonding division should be paid therefrom, and this office will so recommend.

The operations of the fund during the first six months of its existence, January 1 to June 30, 1908, were as follows:

On hand January 1, 1908	₱122,553.14
Receipts:	
From premiums on bonds executed during the first half of the calendar year 1908 and from premiums due on bonds for prior years	38,777.39
Interest on fixed deposits	218.75
Total	161,549.28
Withdrawals:	
Refunds of unearned premiums for former years	574.47
Balance of fund in treasury June 30, 1908	160,974.81
In hands of collecting officers and not yet deposited in the treasury	2,561.75
	163,536.56
Outstanding check vouchers	100.89
Total fund June 30, 1908	163,435.67

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CERTIFICATES OF INDEBTEDNESS.

On September 1, 1906, the sixth and last series of certificates of indebtedness, amounting to $1,000,000, United States currency, was issued for the purpose of partially paying off a previous issue of September 1, 1905, amounting to $1,500,000, United States currency, the balance of $500,000 due on this last issue being paid in cash.

The issue of September 1, 1906, was due and payable September 1, 1907, and was paid off on that date from the gold standard fund. The payment of this last series leaves the gold standard fund free from all indebtedness and, including balance due from the United States mint at San Francisco on account of old coin forwarded for recoinage, with a net credit balance of about ₱16,100,000, Philippine currency. Detailed information concerning the operations of the gold standard fund for the fiscal year 1908 will be found in the latter part of this report.

BOND ISSUES.

There have been no bond issues during the present fiscal year by the insular government or by the city of Manila. The total obligations of the insular government and of the city of Manila on account of bond issues, at the close of the fiscal year were as follows:

Class.	Authority.	Date of issue.	Rate of interest term.	Amount.	Purpose.
Friar lands bonds...	Act of Congress approved July 1, 1902.	Feb. 1,1904	4 per cent 10-30's.	₱14,000,000.00	Purchase of friar lands in Philippine Islands.
Public works and permanent improvement bonds.	Act of Congress approved February 6, 1905.	Mar. 1,1905	...do.....	5,000,000.00	For construction of public works and permanent improvements.
Do.....	.....do.....	Feb. 1,1906	...do.....	2,000,000.00	Do.
Total amount.	.....	.....	.....	21,000,000.00	
ISSUED BY CITY OF MANILA.					
Sewer and water-works construction bonds.	Act of Congress approved July 1, 1902.	June 1,1905	...do.....	2,000,000.00	For construction of sewer and water system.
Do.....	.....do.....	Jan. 2,1907	...do.....	4,000,000.00	Do.
Total amount.	.....	.....	.....	6,000,000.00	

A sinking fund for the payment of the friar lands bonds at maturity was created by the act of Congress approved July 1, 1902, but as the receipts from the sales of the lands and from leases thereof appeared to be insufficient to provide the required amount for the payment of the bonds at maturity, the United States Philippine Commission has provided in Act No. 1749 for permanent annual appropriations for such fund.

These appropriations are available as follows:

From February 1, 1908, to February 1, 1913, inclusive, ₱140,000 each year; from February 1, 1914, to February 1, 1923, inclusive, ₱280,000 each year; from February 1, 1924, to February 1, 1933, inclusive, ₱294,000 each year.

A sinking fund has also been created by Act No. 1729 of the United States Philippine Commission for the payment at maturity of the ₱7,000,000 of public works and improvements bonds issued under the act of Congress approved February 6, 1905. The act appropriated for this fund ₱404,204.13, and in addition thereto, ₱20,406.92, Philippine currency, for each ₱1,000,000 of bonds issued, said amount to be available upon each anniversary date of issue of said bonds.

The amounts appropriated and the dates available are as follows: ₱40,813.84, available February 1, 1908, and each year thereafter until bonds are paid; ₱102,034.60, available March 1, 1908, and each year thereafter until bonds are paid.

The appropriations for the sinking fund for the payment at maturity of the city of Manila sewer and water works construction bonds issued are available

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as follows: ₱38,740, available from June 1, 1906, and each year thereafter until bonds are paid; ₱77,480, available from January 2, 1908, and each year thereafter until bonds are paid.

The total amount of bonds authorized is ₱8,000,000, but only ₱6,000,000 have so far been issued. The act authorizing the issue provided that the remaining ₱2,000,000 should be issued January 2, 1908, but as the funds were not needed by the city and the financial conditions existing in the United States at that time were extremely unfavorable for a bond issue, it was considered advisable to delay the same until financial conditions improved and a more favorable market for the bonds could be obtained. The bonds will probably be issued about October 1 next, if the market conditions are then favorable.

GUARANTY OF INTEREST ON BOND ISSUES OF RAILWAY CORPORATIONS UNDER THE ACT OF CONGRESS APPROVED FEBRUARY 6, 1905.

Under the act of Congress above cited the insular government guarantees the interest on bonds issued by the Philippine Railway Company for the construction of certain railroads on the islands of Negros, Panay, and Cebu. During the fiscal year the company was authorized to issue bonds to the amount of $3,770,000 on completed portions of its lines. The dates on which the bonds were turned over to the Bankers Trust Company, trustee, by the chief of the bureau of insular affairs, and the amounts thereof, are as follows:

Date.	Amount.
September 7, 1907	$800,000
December 3, 1907	173,000
January 1, 1908	572,000
March 13, 1908	881,000
April 20, 1908	453,000
June 18, 1908	891,000
Total	3,770,000

During the fiscal year the insular government advanced interest to the railway company on account of its guaranty on said bonds to the amount of ₱111,807.22, Philippine currency.

Commencing July 1, 1908, the liability of the insular government for interest guaranteed on bonds already issued by the Philippine Railway Company on account of the construction of its railway lines on the islands named will amount to ₱301,600. This liability will increase as the issue of additional bonds is authorized upon further completion of the lines under construction.

PHILIPPINE POSTAL SAVINGS BANK.

The Philippine Postal Savings Bank was opened in Manila for the receipt of deposits on October 1, 1906, and branch offices were subsequently opened in the provinces. At the close of the fiscal year ended June 30, 1907, there were in operation 9 offices of the first class, 81 of the second class, and 143 of the third class; and the total amount of savings deposits with the bank on the same date was ₱509,463.34. The total number of savings accounts was 2,331, and the average amount of each deposit was ₱217.21. The total number of depositors during the last fiscal year was 2,676, divided as follows:

Americans	1,616
Filipinos	944
Other nationalities	116
Total	2,676

The foregoing total includes all depositors who opened accounts during the period October 1, 1906, to June 30, 1907, some of which accounts were subsequently closed out.

During the fiscal year 1908 the number of offices in operation was 245, an increase over the preceding year of 12, divided as follows: First class, 12, an increase of 3 over the preceding fiscal year; second class, 106, an increase of 25 over the preceding fiscal year; and third class, 127, a decrease of 16 under the preceding fiscal year.

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The decrease in the number of third-class offices is due to the fact that some of them were advanced to second class during the fiscal year, as third-class offices are only authorized by law to receive deposits in the form of postal savings bank stamps.

The total amount of savings deposits at the close of the fiscal year ended June 30, 1908, was ₱1,031,994.04, an increase over the preceding fiscal year of ₱522,530.77, or slightly over 100 per cent. The number of savings accounts with the bank was 5,389, an increase over the preceding fiscal year of 3,058, or 131 per cent, and the average amount of each deposit was about ₱190.

More detailed information concerning the operations of the bank will be contained in the annual report of the director of posts, under whose supervision and control it is operated, with the exception of investments of the bank's funds, which are invested by a board consisting of the secretary of commerce and police, the secretary of finance and justice, the director of posts, the insular treasurer, and a business man appointed by the governor-general. The members of the board receive no compensation for their service.

The heavy increase in the amount of savings deposits at the close of this fiscal year over the amount with the bank at the close of the last is the best indication we have of the growing popularity of the bank with the people of these islands. It is exceedingly gratifying to call attention to this increase, as it has occurred notwithstanding the fact that the International Banking Corporation operates a savings bank department in connection with its local branch, and pays interest on savings deposits at the rate of 3 per cent per annum, and the Monte de Piedad and Savings Bank pays interest at the rate of 4 per cent per annum, whereas the Postal Savings Bank only pays 2½ per cent per annum on such deposits.

The savings bank department of the International Banking Corporation has been receiving savings deposits for about 3 years, and the Monte de Piedad and Savings Bank has been receiving deposits for a number of years. The total amount of such deposits with this institution on June 30, 1908, was ₱1,288,000, while the total savings deposits with the International Banking Corporation on that date were ₱513,000. It will be observed, therefore, that the deposits of the Postal Savings Bank, which has been in operation less than two years, have almost reached the amount of the savings deposits of the Monte de Piedad, after its long period of operation, and exceeded those of the International Banking Corporation by 100 per cent.

The act providing for the organization of the Postal Savings Bank and amendments thereto were published in the annual report of the insular treasurer for the fiscal year ended June 30, 1907.

PHILIPPINE AGRICULTURAL BANK.

In the annual report of the treasurer for the last fiscal year attention was called to the fact that although Congress had authorized the insular government "to guarantee an income of 4 per cent per annum for a period not to exceed twenty-five years, to individuals or corporations who may invest capital in an agricultural bank in the Philippine Islands," no applications for a charter for the establishment of such a bank had been received. The treasurer recommended in his report, above referred to, that if no applications were received within a reasonable time, that the Philippine Legislature appropriate the sum of ₱1,000,000 for the establishment of a government agricultural bank. As no applications were received for a charter for such a bank, the Philippine Legislature enacted a law, Act No. 1865, creating the "Agricultural Bank of the Philippine Government," and appropriating the sum of ₱1,000,000 for the capital of said bank, the act becoming effective July 1, 1908.

The bank was authorized to receive deposits of funds from provinces, municipalities, the Postal Savings Bank, societies, corporations, and private persons. The rate of interest to be paid on such deposits can not, under the law, exceed 4 per cent per annum. The law provides that the affairs and business of the bank shall be administered by a board of directors, consisting of the secretary of finance and justice, the insular treasurer, and three citizens of the Philippine Islands or of the United States, who must reside within the Philippine Islands, appointed by the governor-general, and that the manager of the bank shall be the insular treasurer. Loans may be made in amounts of not less than ₱50 and up to but not exceeding ₱25,000, to individuals or corporations,

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provided the funds obtained on such loans are used strictly for agricultural purposes and the loan is authorized by resolution of the board of directors.

The law also authorizes the insular treasurer, with the approval of the governor-general, to constitute provincial and municipal treasurers agents of the bank. The period for which loans can be made can not exceed ten years, and the rate of interest charged on any loan can not exceed 10 per cent per annum. Fifty per cent of the capital is reserved for loans of ₱5,000 or less.

The necessary blank forms, books, etc., for the use of the bank are now being prepared by this office, and a special effort will be made to have the same organized and in operation at the earliest practicable date.

The act as enacted by the Legislature is attached as Exhibit A of this report.

DRAFTS ON PROVINCES.

In the treasurer's annual report for the preceding fiscal year reference was made to the enactment of Act No. 1636 by the United States Philippine Commission, providing for the sale of telegraphic transfers and demand drafts between Manila and the provinces and vice versa by the insular treasurer and all provincial treasurers. The preparation of a suitable code to be used for the purpose of transferring funds by telegraph required a greater amount of time and labor than was anticipated, and the provisions of the act could not be put into full force and effect until March of this year.

The rate of premium charged for telegraphic transfers and demand drafts has been fixed by the secretary of finance and justice, in whom such authority is vested by law, as follows: For demand drafts, one-fourth of 1 per cent; for telegraphic transfers, one-fourth of 1 per cent, and in addition thereto, cost of all telegrams in connection with the transfer.

One-fourth of 1 per cent is the commercial rate charged by the steamship lines within the islands for transporting funds, so that they can now be transferred by means of demand drafts or telegraphic transfers at a lower rate than they can be shipped over commercial lines, as the expense of money boxes, packing, cartage, and insurance is completely eliminated for the remitter. The rate as now fixed is uniform throughout the islands, although the cost of shipping funds, where shipments are necessary, varies. There are some ports to which direct shipments can not be made, and in such cases transshipment becomes necessary at some convenient port. An additional charge is made for this transportation from port of transshipment to port of destination. When funds are shipped to interior provinces, such as Lepanto Bontoc, Nueva Vizcaya, and Benguet, and to provinces located along railroad lines, the cost of shipping varies from one-third of 1 to 1¼ per cent; therefore it may become necessary, at some future date, to increase the rate of premium to be charged for demand drafts and telegraphic transfers on some provinces and at the same time to reduce the rate now charged on others.

With the approval of the secretary of finance and justice first had receipts from the sale of demand drafts and telegraphic transfers under this act are disposed of as follows: All premiums collected by the insular treasurer are credited to the gold standard fund; all premiums collected by provincial treasurers are credited to the province as miscellaneous provincial revenue.

Commercial firms and individuals quickly availed themselves of the opportunity of transferring their funds between Manila and the provinces and vice versa by means of telegraphic transfers and demand drafts in lieu of making actual shipments of cash, and the transfer of funds in this way has steadily increased. From April 1 to June 30, 1908, this office transferred, by means of demand drafts and telegraphic transfers, funds to the amount of ₱234,502.45, Philippine currency, to the provinces, on which premiums were received amounting to ₱586.26. During the same period the amount transferred from the provinces to Manila, through provincial treasurers, approximated ₱215,000, making the total amount transferred to and from the provinces during the three months above named about ₱450,000, or an average of ₱150,000 per month.

In a number of cases there has been considerable delay in making payments of telegraphic transfers on account of interrupted telegraphic communication. This is particularly true with reference to those made between Manila and Zamboanga, and vice versa; in some instances the mail advices of telegraphic transfers sold at Zamboanga having reached the insular treasurer at Manila

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before the telegram referring thereto had been received by the treasurer. Unless uninterrupted telegraphic communication can be maintained, there is little hope for extensive sales of telegraphic transfers.

The commercial firms located at Zamboanga, Moro Province, have been the most extensive buyers of telegraphic transfers on Manila, these being preferable on account of infrequent mail service between that port and Manila and the very slight increase over the cost of demand drafts. The delays in receiving telegrams from and in sending telegrams to Zamboanga appear to be between that port and Malabang. If some arrangement could be made for the erection of a wireless station between those two points quick service could probably be obtained, and would not only increase the revenues derived from the sale of telegraphic transfers but would also be of inestimable value to the commercial interests of southern Mindanao.

BANKS AND BANKING.

During the fiscal year the following institutions were examined by deputies of the insular treasurer:

Hongkong and Shanghai Banking Corporation, Manila, P. I., subagency Iloilo, P. I.; Chartered Bank of India, Australia and China, Manila, P. I., subagency Cebu, P. I.; International Banking Corporation, Manila, P. I., subagency Cebu, P. I.; Banco Español-Filipino, Manila, P. I., subagency Iloilo, P. I.; Monte de Piedad and Savings Bank, Manila, P. I.; Manila Building and Loan Association, Manila, P. I.

In the treasurer's annual report for the preceding fiscal year attention was called to the fact that the treasurer was required under Act No. 52, as amended, to make an examination of the books and accounts and a count of the cash of every banking institution in the Philippine Islands at least once in every six months. Including the subagencies of the Manila banks, there are ten institutions to be thus examined twice during each year. The treasurer has not been able to comply with the law in this respect on account of an insufficient number of employees to do the work.

A comparative consolidated statement of the resources and liabilities of all the commercial banks in the Philippine Islands at the close of business June 30, 1906, June 30, 1907, and June 30, 1908, is as follows:

Resources and liabilities of all commercial banks in the Philippine Islands at close of business June 30, 1906, 1907, and 1908.

RESOURCES.

	June 30, 1906.	June 30, 1907.	June 30, 1908.	Increase.	Decrease.
Loans and discounts	₱8,009,638.14	₱7,788,673.26	₱8,258,735.85	₱470,062.59	.....
Overdrafts	10,319,791.02	10,869,079.63	11,536,128.65	667,049.02	.....
Stocks, securities, etc	151,801.47	98,642.67	825,618.72	726,976.05	.....
Banking house, furniture and fixtures	153,735.23	169,681.46	168,320.26	.....	₱1,361.20
Other real estate and mortgages owned	364,447.25	528,214.85	581,176.72	52,961.87	.....
Due from other banks	314,940.03	153,111.67	324,577.49	171,465.82	.....
Due from head office and branches	3,878,336.91	3,031,296.22	4,619,379.63	1,588,083.41	.....
Due from agents and correspondents	318,062.26	654,730.81	615,327.80	.....	39,403.01
Bills of exchange	906,231.26	1,055,238.04	1,859,618.19	804,380.15	.....
Cash on hand	4,575,462.40	8,447,611.91	5,173,580.27	.....	3,274,031.64
Checks and other cash items	118,738.93	119,800.94	112,518.54	.....	7,282.40
Profit and loss account	72,178.09	51,835.80	12,967.34	.....	38,868.46
Resources other than those above	1,520,016.97	1,136,798.04	820,478.39	.....	316,319.65
Total	30,703,379.96	34,104,715.30	34,908,427.85	4,480,978.91	3,677,266.36

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Resources and liabilities of all commercial banks in the Philippine Islands at close of business June 30, 1906, 1907, and 1908—Continued.

LIABILITIES.

	June 30, 1906.	June 30, 1907.	June 30, 1908.	Increase.	Decrease.
Capital stock	₱2,500,000.00	₱2,500,000.00	₱2,564,400.00	₱64,400.00	
Reserve fund	2,425,267.52	2,573,836.16	2,351,481.78		₱222,354.38
Undivided profits	1,502.11	275,596.20			275,596.20
Bank notes in circulation	1,500,000.00	1,459,265.00	1,565,295.00	106,030.00	
Due to other banks	314,940.03	184,070.33	324,577.49	140,507.16	
Due to head office and branches	9,467,444.38	9,079,617.76	6,930,157.67		2,149,460.09
Due to agents and correspondents	60,433.61	69,597.72	574,789.38	505,191.66	
Dividends due and unpaid	67,330.54	66,514.54	67,043.50	528.96	
Demand deposits	21,131.90	283,872.66	298,239.92	14,367.26	
Time deposits	3,679,975.74	6,078,759.94	8,568,823.13	2,490,063.19	
Savings deposits		566,596.04	541,078.51		25,517.53
Current accounts	9,310,374.67	10,252,513.06	9,990,304.05		262,209.01
Bills payable:					
Domestic	8,875.74	11,963.31	17,786.62	5,823.31	
Foreign	18,575.75	15,340.74	16,701.42	1,360.68	
Cashier's checks outstanding	35,296.33	91,770.75	73,615.15		18,155.60
Certified checks	699,146.94	236,097.35	318,208.12	82,110.77	
Profit and loss account		12,695.10	9,043.67		3,651.43
Suspense account	204,098.83	280,835.81	431,937.38	151,101.57	
Liabilities other than those above	388,985.87	65,772.83	264,945.06	199,172.23	
Total	30,703,379.96	34,104,715.30	34,908,427.85	3,760,656.79	2,956,944.24

The following banking institutions are included in the foregoing statement: Hongkong and Shanghai Banking Corporation, Manila, subagency Iloilo; Banco Español-Filipino, Manila, branch Iloilo; Chartered Bank of India, Australia and China, Manila, subagency Cebu; International Banking Corporation, Manila, subagency, Cebu.

BANK OF PANGASINAN.

This institution was placed in the hands of the insular treasurer as receiver on January 6, 1906. All creditors and the stockholders of the institution having been paid in full, the receivership was terminated by an order of the court, after an examination of the accounts, on March 23, 1908, and fees to the amount of ₱1,023.29 were allowed the receiver for his services. The amount so received was deposited in the insular treasury in accordance with the provisions of section 1 of Act No. 556 of the United States Philippine Commission.

AMERICAN BANK.

This institution has been in process of liquidation by the insular treasurer since May 18, 1905, and during this period the creditors of the institution have received 53 per cent of the amount of their claims. On account of the large amount of worthless loans and discounts held by the bank and which it has been impossible to collect, it is not believed that the creditors of this institution will receive any further payments upon their claims. The amount of the bank's funds now in the receiver's hands and available for the payment of claims is ₱4,156.39, Philippine currency. After deducting the cost of the receivership and other expenses in connection therewith, estimated at ₱2,500, there remains only ₱1,656.39 available for the payment of claims amounting to ₱114,594.61, or less than 1½ per cent of the amount of the claims. The receiver hopes to wind up the affairs of this institution and have the receivership terminated before the end of the next fiscal year.

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S. MISAKA BANK.

This institution was placed in the hands of the insular treasurer as receiver on December 11, 1906. In the treasurer's annual report for the preceding fiscal year reference was made to the class of people to whom this bank had granted loans, and the great difficulty experienced by him in collecting such loans. The receiver came to the conclusion that the expense of the receivership would amount to more than could be collected from the assets of this institution, and recommended to the court that such assets be disposed of at auction, which was approved and the assets ordered disposed of in the manner indicated. The sale was held at the office of the treasurer on February 18, 1908, and ₱655.55 were received for the remaining assets of the bank. The total amount now in the hands of the receiver is ₱1,127.11, against which there are claims of creditors amounting to ₱12,101.32. After allowing a small amount for cost of the receivership and other expenses in connection therewith, estimated to be ₱250, the creditors will receive about 7 per cent of the amount of their claims.

THE BANK OF ZAMBOANGA.

This institution, which has been operating under the name above stated but which was not a banking institution in any sense of the word, advised this office on April 11, 1908, by letter that it desired permission to discontinue doing business, which was referred to the secretary of finance and justice on April 15. This office was later advised, unofficially, that this institution had discontinued doing business.

MUTUAL BENEFIT AND BENEVOLENT ASSOCIATIONS.

During the fiscal year reports have been received from the following mutual benefit and benevolent associations and societies: Firemen's Relief Association (Manila fire department); Comite del Trabajo de Balic-Balic (labor union, Balic-Balic branch); Impresores, Litografos y Encuadernadores (printers, lithographers, and bookbinders' association); Philippine Teachers' Association; Sociedad Los Cristianos Vivos (Society of Live Christians); Liga Socorros Mutuos de Empleados de Correos de Manila (Postal Employees Mutual Benefit Society of Manila).

Their reports show balances on hand July 1, 1907, and receipts, disbursements, and balances on hand June 30, 1908, as follows:

Balances on hand July 1, 1907		₱9,756.59
Receipts during year:		
From dues	₱2,442.85	
From fees	51.00	
From donations	69.05	
From miscellaneous sources	70.25	
From interest on deposits	379.30	
		3,012.45
Total		12,769.04
Disbursed during year:		
For sick benefits	₱1,369.05	
For death benefits	297.00	
For marriage benefits	84.00	
Miscellaneous expenses	665.17	
		2,415.22
Total balances June 30, 1908		10,353,82

The following associations were examined during the year by a deputy of the insular treasurer: The Firemen's Relief Association, on May 4, 1908; Comite del Trabajo de Balic-Balic, on May 25, 1908.

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The condition of these two societies was as shown in the following statements:

Firemen's Relief Association.

Balance on hand July 1, 1907		₱9,218.25
Receipts:		
From dues	₱1,406.00	
From interest on deposits	306.85	
		1,712.85
Total		10,931.10
Disbursed:		
For relief purposes	₱1,156.50	
For contingent expense	101.00	
		1,257.50
Balance on hand May 4, 1908		9,673.60

Balance on hand is disposed of as follows:

Deposits in bank	₱9,669.60
Cash on hand	4.00
	9,673.60

Comite del Trabajo de Balic-Balic.

Balance on hand July 1, 1907	₱226.11
Receipts from dues	200.86
Total	426.97
Disbursed for relief purposes	174.92
Balance on hand May 25, 1908	252.05

Balance on hand is disposed of as follows:

Cash on hand	₱252.05

THE GOLD-STANDARD FUND.

The operations of the gold-standard fund for this fiscal year show a heavy increase over the fiscal year ended June 30, 1907. The sale of exchange on New York has been the heaviest of any year since the gold-standard fund was established in 1903, the increase in the amount of telegraphic transfers and demand drafts over the preceding fiscal year, sold to commercial firms and banking institutions only, amounting to ₱18,766,661.56 Philippine currency, or 240 per cent. The total amount of New York exchange sold was ₱27,798,197.10, including ₱1,275,350 to bureaus of the insular government.

Notwithstanding the heavy drafts on the fund in New York, the treasurer was able to maintain there during the year an average monthly balance of $4,056,257.44 United States currency. During the year, by means of transfers with the Treasurer of the United States, the insular treasurer placed to the credit of the fund in New York, $11,000,000 United States currency, without cost to the fund other than expense of cablegrams, and it was through this method of transfers that the fund was able to meet the heavy demands for New York exchange above referred to.

There was received during the year for interest on balances of the gold-standard fund with depositaries in the United States, ₱365,336.82 Philippine currency, an increase over the preceding fiscal year of ₱255,841.82, or nearly 200 per cent, all of which was credited to the fund.

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The following is a summary of the operations of the gold-standard fund for the fiscal year ended June 30, 1908:

	Fund in Manila.		Fund in New York, United States currency.
	Philippine currency.	United States currency.	
DEBIT ITEMS.			
Balance June 30, 1907	[ab]₱9,946,111.56	[a]$124,602.27	$5,363,418.96
New York exchange	26,522,847.10		
Government exchange	1,275,350.00		
Premium on New York exchange, commercial	279,844.22		
Premium on New York exchange, government	61,171.80		
Premium on interisland exchange	596.21		
Exchanges with other funds		12,501.55	1,440,000.00
Sale of local currency	39,030.30		
New coin received from the United States	17,201,000.00		
Currency exchanges	5,576,037.88	13,100,291.31	
Redemption of Philippine currency in New York		4,805.50	
Exchange with Treasurer of the United States			11,000,000.00
Interest on deposit in United States			182,668.41
Sale of proof sets of Philippine coin			272.00
Sale of Igorot copper	70.95		
Sale of money boxes	217.90		
Seized funds, Acts Nos. 1411 and 1731	4,277.31		
Return of reward, resolution, Philippine Commission, July 3, 1906	29.82		
Proceeds mutilated coin sent to United States	14.14		8,001.00
Certificate of deposit, Hongkong Bank	800,000.00		
Miscellaneous			95.00
Advances repaid	654.54		
Total	41,815,030.61	12,992,996.09	17,994,455.37
CREDIT ITEMS.			
Exchange with Treasurer of United States		11,000,000.00	
Shipped to San Francisco Mint for recoinage	15,905,000.00		
Purchase of local currency	8,032.57		
Cablegrams	1,160.21		
Sixth series certificates of indebtedness			1,000,000.00
Interest on same			10,000.00
Premium on telegraphic transfer for principal and interest on above	22,725.00		
Rewards, Act No. 1411	227.67		
To adjust difference on books of insular auditor and treasurer, Philippine Islands	4,164.60		
Special deposit with Hongkong Bank	800,000.00		
Sent to the United States for redemption		8,000.50	
New York exchange			13,844,003.55
New York exchange paid in Manila		95.00	
Miscellaneous		95.00	
Advance to insular disbursing officer	14,315.86		
Advance to A. T. Ruan, disbursing agent, Philippine revenues, Washington, D. C.			550,000.00
General purpose, gold-standard fund	24,564.86		
Exchange with other funds	[c]3,015,003.10		
Currency exchanges	26,200,582.62	2,788,018.94	
Redemption of Philippine currency in United States			4,805.50
Copper coin sent for recoinage	37,827.00		
Balance June 30, 1908	[a]4,218,572.88	[a]803,213.35	2,585,646.32
Total	41,815,030.61	12,992,996.09	17,994,455.37

[a] Overdraft.

[b] Not including Pfs. 65,910.09 local currency, valued at ₱50,700.07, disposed of during fiscal year covered by this report.

[c] ₱110,000 of this item is countercharged of like amount taken up in debit item, government exchange, and belonging to general fund.

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The status of the gold-standard fund at the close of each month during the fiscal year has been as follows:

	Fund in Manila.		Fund in New York, United States currency.	Total, Philippine currency.	Due from San Francisco mint, Philippine currency.	Net balance in fund, including amount due from United States mint at San Francisco, Philippine currency.
	Philippine currency.	United States currency.				
1907.						
July 31	a₱8,150,372.56	a $1,526,308.19	$6,415,087.66	₱1,627,186.38	₱7,111,516.29	₱8,738,702.67
Aug. 31	a 7,690,561.56	a 1,693,255.06	5,462,173.69	a 152,724.30	8,173,653.14	8,020,928.84
Sept. 30	a 7,809,913.29	a 1,786,174.50	5,302,846.32	a 776,569.65	9,165,332.77	8,388,773.12
Oct. 31	a 8,082,591.84	a 1,860,143.50	5,494,565.97	a 813,746.90	9,892,626.70	9,078,879.80
Nov. 30	a 8,989,777.97	a 1,219,775.92	5,262,662.78	a 904,004.25	10,604,222.34	9,700,218.09
Dec. 31	a 10,185,876.97	a 1,189,591.02	3,836,776.78	a 4,891,505.45	11,608,000.00	6,716,494.55
1908.						
Jan. 31	a 8,145,515.99	a 745,682.19	2,860,742.56	a 3,915,395.25	16,744,000.00	12,828,604.75
Feb. 29	a 9,539,028.67	a 928,637.56	3,270,324.08	a 4,856,255.63	18,643,528.00	13,787,272.37
Mar. 31	a 10,884,399.77	a 968,591.79	3,303,313.17	a 6,254,957.01	21,335,692.85	15,080,735.84
Apr. 30	a 7,615,884.98	a 702,121.29	2,444,394.83	a 4,131,337.90	19,604,417.25	15,473,079.35
May 31	a 6,115,853.47	a 577,447.92	2,436,555.22	a 2,397,638.87	18,338,009.22	15,940,370.35
June 30	a 4,218,572.88	a 803,213.35	2,585,646.32	a 653,706.94	16,755,353.30	16,101,646.36

a Overdraft.

The heavy overdrafts on the fund for the first nine months of the fiscal year, shown in the foregoing statement, were due to heavy shipments of the old coinage to the United States mint at San Francisco for recoinage, under the provisions of Act No. 1564. During the period above stated there were shipped to the mint ₱13,860,000. Including shipments made prior to this fiscal year, the total amount forwarded to the mint was ₱21,860,000, and there was due therefrom in the recoinage account on March 31, 1908, ₱21,335,000—very nearly the amount shipped to it by this office.

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GOLD-STANDARD FUND DRAFTS.

The record of gold-standard fund drafts sold since the inauguration of the Philippine currency system appears in the following table:

Gold-standard fund drafts sold in Manila on New York.

Date.	Sold to banking institutions.		Sold to commercial firms and individuals.		Sold to bureaus of insular government.		Total sold.	Premiums realized.
	Telegraphic transfers.	Demand drafts.	Telegraphic transfers.	Demand drafts.	Telegraphic transfers.	Demand drafts.		
1903–4.								
October	$100,000.00	$400,000.00		$1,500.00			$501,500.00	₱8,272.50
November	50,000.00	100,000.00					150,000.00	2,625.00
December	300,000.00	50,000.00	$27,000.00	18,588.66			395,588.66	8,385.87
January	50,000.00		10,000.00				60,000.00	1,350.00
February								
March	970,000.00		10,000.00	20,110.79			1,000,110.79	22,351.66
April	500,000.00	20,000.00	10,000.00	10,431.52			540,431.52	11,931.48
May	250,000.00	50,000.00	45,000.00	23,627.26			368,627.26	7,741.92
June		220,000.00	50,867.48	51,829.32			322,696.80	5,221.97
Total	2,220,000.00	840,000.00	152,867.48	126,087.55			3,338,955.03	67,880.40
1904–5.								
ly		60,000.00	3,000.00	18,419.87			81,419.87	1,243.79
igust		185,000.00					185,000.00	2,775.00
ptember		140,000.00		26,713.29			166,713.29	2,500.70
ober		40,000.00	40,000.00	58,076.38			138,076.38	1,771.14
vember				2,233.25			2,233.25	33.50
cember				183.62			183.62	2.76
anuary								
ebruary				5,000.00			5,000.00	75.00
March				8,309.85			8,309.85	124.66
April	250,000.00		20,000.00	6,417.47			276,417.47	6,171.28
May	550,000.00	40,000.00		58,578.14			648,578.14	13,853.69
June	500,000.00	236,000.00		29,064.68			765,064.88	15,225.98
Total	1,300,000.00	701,000.00	63,000.00	212,996.55			2,236,996.75	43,777.50
1905–6.								
July	300,000.00	60,000.00		76,765.79			436,765.79	8,801.48
August	400,000.00	200,000.00	200,000.00	60,116.70			860,116.70	17,401.75
September	525,000.00	100,000.00	15,000.00	4,033.32			644,033.32	13,710.50
October	350,000.00	235,000.00	19,667.02	15,863.77			620,530.79	12,080.46
November	750,000.00	60,000.00	25,000.00	26,643.07			861,643.07	18,737.14

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December	325,000.00	85,000.00	77,500.00	3,747.17			491,247.17	10,387.45
January	250,000.00	210,000.00	25,000.00	250,330.43			735,330.43	13,298.68
February			30,000.00	7,285.53			37,285.53	784.24
March	500,000.00	6,000.00	30,000.00	150,034.29			686,034.29	10,290.51
April	750,000.00		60,000.00	4,320.46			814,320.46	12,214.80
May	260,000.00	3,734.52	100,000.00	19,853.30			383,587.82	4,253.80
June	760,000.00		95,876.48	28,089.13			883,965.61	14,630.50
Total	5,170,000.00	959,734.52	678,043.50	647,082.96			7,454,860.98	136,591.35
1906-7.								
July	340,000.00		56,000.00	23,056.12			419,056.12	6,285.84
August	65,000.00		107,800.00	23,847.92			196,647.92	2,949.72
September	660,000.00		42,000.00	2,906.40			704,906.40	10,573.61
October		27,000.00	2,000.00	24,331.21			53,331.21	814.96
November			7,500.00	5,000.00			12,500.00	243.75
December	645,000.00	45,000.00	10,500.00	70,089.29			770,589.29	15,725.08
January	450,000.00	80,000.00	57,000.00	25,630.86			612,630.86	12,991.97
February	175,000.00	30,000.00	13,000.00	67,630.97			285,630.97	5,694.48
March	100,000.00	50,000.00	13,000.00	37,000.00			200,000.00	3,847.50
April		50,000.00	20,000.00	16,550.00			86,550.00	1,448.31
May		40,000.00	27,250.00	12,000.00			79,250.00	1,393.12
ne		200,000.00	15,000.00				215,000.00	3,337.50
Total	2,435,000.00	522,000.00	371,050.00	308,042.77			3,636,092.77	65,305.84
1907-8.								
July	250,000.00	675,000.00	4,000.00	5,400.00		$50,000.00	984,400.00	7,960.50
August	350,000.00	520,000.00	37,500.00	35,022.47			942,522.47	8,522.04
September	1,050,000.00	25,000.00	18,000.00	26,020.87		130,000.00	1,249,020.87	12,397.66
October	775,000.00	25,000.00	103,000.00	4,387.67			907,387.67	10,772.91
November	175,000.00	75,000.00	42,445.00	38,507.19		95.00	331,047.19	4,047.55
December	1,915,000.00	30,000.00	77,500.00	3,000.00		50,000.00	2,075,500.00	26,253.77
January	1,475,000.00	50,421.84	40,000.00	18,880.61		9,000.00	1,593,302.45	19,781.16
February	475,000.00	50,000.00	67,500.00	5,325.48	$55,000.00	50,000.00	702,825.48	8,299.32
March	775,000.00	60,000.00	25,000.00	11,598.41	40,000.00	130,000.00	1,041,598.41	11,674.48
April	1,275,000.00	125,000.00	74,000.00	27,469.59		35,000.00	1,536,469.59	18,501.03
May	1,189,000.00	25,000.00	91,500.00	24,670.61	100,000.00	77,675.00	1,507,845.61	17,610.00
June	775,000.00	50,000.00	41,500.00	10,678.81	70,000.00	80,000.00	1,027,178.81	11,553.21
Total	10,479,000.00	1,710,421.84	621,945.00	210,961.71	265,000.00	611,770.00	13,899,098.55	157,373.63
Premiums on telegraphic transfers and demand drafts sold to bureaus of the government during preceding fiscal year were paid in this fiscal year to the amount of								13,134.38
								170,508.01

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Drafts on the gold-standard fund sold in New York on Manila.

Date.	Sold to banking institutions.		Sold to commercial firms and individuals.		Sold to bureaus of insular government.		Total sold.	Premiums realized.
	Telegraphic transfers.	Demand drafts.	Telegraphic transfers.	Demand drafts.	Telegraphic transfers.	Demand drafts.		
1906–7.								
March	$200,000.00						$200,000.00	₱1,500.00
April	60,000.00						60,000.00	450.00
Total	260,000.00						260,000.00	1,950.00
1907–8.								
September					$90,000.00		90,000.00	675.00
October					100,000.00		100,000.00	750.00
November					100,000.00		100,000.00	
January					75,000.00		75,000.00	562.50
February					50,000.00		50,000.00	375.00
March					125,000.00		125,000.00	937.50
April					150,000.00		150,000.00	1,125.00
May					300,000.00		300,000.00	2,250.00
Total					990,000.00		990,000.00	[a] 6,675.00

[a] This premium was paid in Manila and is included with table of premiums for telegraphic transfers and demand drafts sold in Manila.

The Philippine currency paid into the Treasury for the above-mentioned drafts was withdrawn from circulation, as provided in section 7 of the Philippine gold-standard act.

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PHILIPPINE CURRENCY AND UNITED STATES CURRENCY EXCHANGES.

The following exchanges of Philippine currency and United States currency have been made by the insular treasurer, pursuant to section 7 of the Philippine gold standard act, since October 10, 1903, the date of the passage of that act:

Quarter ending—	Sold.		Bought.	
	Philippine currency.	United States currency.	Philippine currency.	United States currency.
1903-4.				
December 31	₱1,242,076.36	$484,231.38	₱968,462.76	$621,038.18
March 31	2,761,591.66	811,506.70	1,623,013.40	1,380,795.83
June 30	3,304,755.56	749,283.46	1,498,566.92	1,652,377.78
Total	7,308,423.58	2,045,021.54	4,090,043.08	3,654,211.79
1904-5.				
September 30	4,815,476.82	847,482.07	1,694,964.14	2,407,738.41
December 31	5,721,983.32	1,438,252.89	2,876,505.78	2,860,991.66
March 31	5,802,107.77	2,349,416.105	4,698,832.21	2,901,053.885
June 30	7,232,131.18	1,122,062.91	2,244,125.82	3,616,065.59
Total	23,571,699.09	5,757,213.975	11,514,427.95	11,785,849.545
1905-6.				
September 30	6,256,373.64	779,558.15	1,559,116.30	3,128,186.82
December 31	6,513,216.42	757,945.38	1,515,890.76	3,256,608.21
March 31	6,010,797.00	1,458,384.98	2,916,769.96	3,005,398.50
June 30	6,479,343.28	1,016,318.12	2,032,636.24	3,239,671.14
Total	25,259,729.34	4,012,206.63	8,024,413.26	12,629,864.67
1906-7.				
September 30	6,105,138.70	1,910,432.60	3,820,865.20	3,052,569.35
December 31	6,929,613.24	704,460.14	1,408,920.18	3,464,806.62
March 31	6,143,143.60	1,033,140.60	2,066,281.20	3,071,571.80
June 30	6,577,528.64	993,340.79	1,986,681.58	3,288,764.32
Total	25,755,424.18	4,641,374.13	9,282,748.26	12,877,712.09
1907-8.				
September 30	6,040,082.66	682,482.56	1,364,965.12	3,020,041.33
December 31	6,794,009.18	802,582.11	1,605,164.22	3,397,004.59
March 31	6,780,187.48	682,141.01	1,364,282.02	3,390,093.74
June 30	6,586,303.30	620,813.26	1,241,626.52	3,293,151.65
Total	26,200,582.62	2,788,018.94	5,576,037.88	13,100,291.31

The greater part of the exchanges of Philippine currency for United States currency are made with the disbursing officers of the army and navy. These officers keep their accounts in the treasury depository in United States currency, but practically all their disbursements are made in Philippine currency.

LOCAL CURRENCY.

The period for the redemption of local currency by the insular government expired on June 30, 1907, and there were no purchases after that date. However, there was received from provincial treasurers during the fiscal year the sum of Pfs. 10,442.46, which had been puchased by them from the public during the few remaining days of the redemption period.

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There was carried over from the preceding fiscal year the sum of Pfs. 65,910.09, making a total of Pfs. 76,352.55 received during the fiscal year. This was disposed of as follows:

Sold.	Cost.	Amount received.	Gain.	Loss.
[a] Pfs. 946.20	₱727.85	₱959.79	₱231.94	.....
[a] 5,750.00	4,423.08	5,750.00	1,326.92	.....
[b] 530.61	408.16	486.41	78.25	.....
[b] 48.04	36.96	36.96	.....	.....
[b] 27,691.56	21,301.20	19,983.00	.....	₱1,318.20
[b] 29,911.55	23,008.89	11,814.14	.....	11,194.75
64,877.96	49,906.14	39,030.30	1,637.11	12,512.95

[a] Silver coin. [b] Copper coin.

The net loss to the government on the foregoing sales is ₱10,875.84, Philippine currency. There were also disposed of during the fiscal year 178 pounds of Igorot copper, 176 pounds of which were sold at ₱0.40 per pound—same price at which purchased by the government—and 2 pounds at ₱0.275 per pound. The net loss on these two sales amounted to ₱0.25. The balance of the local currency, amounting to Pfs. 11,474.59, was forwarded to the United States mint at San Francisco for recoinage, and will coin ₱15,578.16 in Philippine coin of the new weight and fineness, resulting in a profit to the government of ₱6,751.55.

The net loss to the government on the silver and copper coin sold during the year is ₱10,876.09, Philippine currency, and the profit from the recoinage of the silver forwarded to the United States mint is ₱6,751.55.

Deducting this latter amount from the loss on the silver and copper coin sold leaves a net loss of ₱4,124.54 on local currency transactions for this fiscal year. With the exception of Pfs. 578.65, all of the copper coin disposed of was sold as copper bullion in two lots, the first lot of Pfs. 27,691.56 having been sold at ₱0.40 per pound and the second of Pfs. 29,911.55 at ₱0.2675 per pound.

In the treasurer's report for the preceding fiscal year it was stated that the redemption of the silver local currency resulted in a gain to the government of ₱3,548.79, up to the close thereof, and that the loss on the redemption of copper coin for the same period was ₱8,084.90. The total profit on sales and recoinage of silver local currency during this fiscal year have been ₱8,310.41, making a total profit at its close of ₱11,859.20 for the entire period during which the silver local currency was in process of redemption—since 1903. The loss on the sale of copper coin during this fiscal year was ₱12,434.70, and on the sale of Igorot copper ₱0.25, making a total loss on copper of ₱12,434.95 for the year. The loss on all copper coin up to the close of the last fiscal year was stated in the treasurer's report for that year as ₱8,084.90. Adding to this loss ₱12,434.95—net loss on sales during this fiscal year—the total loss on the purchase of copper coin during the period from 1903 to June 30, 1908, has amounted to ₱20,519.85. Deducting the profit on the sale of silver local currency from this amount the net loss to the government on the redemption of local currency for the entire period—1903 to June 30, 1908—has been ₱8,660.65.

LOCAL CURRENCY SHIPMENTS.

The exports of local currency for the present fiscal year have been as follows:

Commercial	Pfs. 122,981.81
Governmental	11,474.59
Total	134,456.40

The total exports for the period from July 1, 1903, to June 30, 1908, inclusive, are as follows:

Commercial	Pfs. 18,951,752.40
Governmental	16,552,931.59
Total	35,504,683.99

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During the period from July 1, 1903, to January 14, 1904, there were imported Pfs. 2,168,703. Deducting this amount from the total exported leaves net exports for the period July 1, 1903, to June 30, 1908, of Pfs. 33,335,980.99. All local currency exported by the insular government was to the United States mint at San Francisco for recoinage, the total amount aggregating Pfs. 16,552,931.59.

THE RECOINAGE.

In the treasurer's report for the preceding fiscal year, reference was made to the change in the weight and fineness of the silver coinage of the islands authorized by the act of Congress approved June 23, 1906, and Act No. 1564 of the United States Philippine Commission, and to the fact that ₱8,000,000 of the silver coin of the first issue had been forwarded to the United States mint at San Francisco for recoinage during the same year. Withdrawals from circulation could not be made to any extent during the past fiscal year, as only a very limited amount of new coin had been received by the treasurer from the mint—₱5,275,000. Part of this new coin was placed in circulation shortly after its receipt, but as stated in last year's report, it met with considerable opposition from people in the provinces. The new coins are smaller in size, lighter in weight, and of less fineness than the first issue, and were consequently looked upon with suspicion. In many places they would only be received in commercial transactions at considerable discount. The opposition to the new currency continued with more or less force during the first four months of this fiscal year, but after that time gradually disappeared and, within six months after the new coin was placed in circulation, it was accepted absolutely without question and circulated side by side with the first issue in every part of the islands.

The withdrawal of the silver coin of the first issue from circulation began as soon as a sufficient amount of the new had been received, and, with the assistance of the provincial treasurers and banking institutions, over ₱16,000,000 was withdrawn from circulation during this fiscal year, and ₱15,905,000 of that amount were forwarded to the United States mint at San Francisco for recoinage. There was also returned to the mint this fiscal year ₱37,827 in copper coin. Of this amount ₱1,399 were in 1-centavo coins in a badly corroded condition caused from contact with salt water and rendering the coins unfit for circulation. The balance (₱36,428) was in one-half centavo coins, part of which were corroded and unfit for circulation. The one-half centavo coins have never been popular with the people, and it was impossible to place them in circulation. The supply of 1-centavo coins was about exhausted, so it was considered advisable to recoin the one-half centavos into 1 centavos, instead of going to the expense of purchasing copper bullion or blanks for coinage purposes. The necessary authority was obtained from the United States Treasury Department, through the Bureau of Insular Affairs, and the one-half centavos and corroded centavos were forwarded to the United States mint at San Francisco for recoinage on the June transport.

During this fiscal year the mint returned to this office new coin to the amount of ₱17,201,000, of which ₱15,201,000 were proceeds of recoinage and ₱2,000,000 were coined from bullion purchased.

The total amount of Philippine coin of the first issue forwarded to the United States mint for recoinage since December 15, 1906, the date of the first shipment, to June 30. 1908, the total amount coined, and balance in circulation is as follows:

Denomination.	Total amount coined.	Returned to mint for recoinage.	Balance in circulation.
Pesos	₱26,994,635.00	₱20,834,000.00	₱6,160,000.00
50 centavos	3,055,021.00	1,955,500.00	1,099,721.00
20 centavos	1,595,744.40	652,600.00	943,144.40
10 centavos	1,133,681.40	462,900.00	670,781.40
5 centavos	499,250.00	.....	266,491.90
1 centavo	378,300.00	1,399.00	371,690.07
½ centavo	88,670.00	36,428.00	52,231.07

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The total amount of new coin received from the United States mints from the time of commencement of the recoinage to the close of this fiscal year is as follows:

Pesos	₱18,476,000
50 centavos	2,151,000
20 centavos	1,046,000
10 centavos	803,000
Total	22,476,000

The following table shows the total amount of Philippine silver and minor coin received from the United States mints, the amount returned for recoinage to June 30, 1908, the amount in the treasury vaults, and the amount in circulation at the close of the fiscal year:

Statement showing amount of coin received from United States mints, amount returned for recoinage, amount in treasury vaults and in circulation.

Denomination.	Amount received from United States mints (old coin).	Amount received from United States mints (new coin).	Total amount received.	Amount returned for recoinage.	Amount in treasury vaults.	Amount in circulation.
Pesos	₱26,994,635.00	₱18,476,000.00	₱45,470,635.00	₱20,834,000.00	₱10,770,420.00	₱13,866,215.00
50 centavos	3,055,221.00	2,151,000.00	5,206,221.00	1,955,500.00	748,712.00	2,502,009.00
20 centavos	1,595,744.40	1,046,000.00	2,641,744.40	652,600.00	373,030.20	1,616,114.20
10 centavos	1,133,681.40	803,000.00	1,936,681.40	462,900.00	337,520.60	1,136,260.80
5 centavos	499,250.00	.....	499,250.00	.....	232,758.10	266,491.90
1 centavo	378,300.00	.....	378,300.00	1,399.00	5,210.93	371,690.07
½ centavo	88,670.00	.....	88,670.00	36,428.00	10.93	52,231.07
Total	33,745,501.80	22,476,000.00	56,221,501.80	23,942,827.00	12,467,662.76	19,811,012.04

The following table shows denominations and amounts of Philippine silver certificates in treasury vaults and in circulation at the close of each quarter during this fiscal year:

Denomination and amount of Philippine silver certificates in circulation.

Denomination.	September 30, 1907.		December 31, 1907.		March 31, 1908.		June 30, 1908.	
	In circulation.	In vaults.	In circulation.	In vaults.	In circulation.	In vaults.	In circulation.	In vaults.
2 pesos	₱2,174,024	₱1,760,000	₱2,282,024	₱4,652,000	₱2,606,024	₱4,328,000	₱2,221,404	₱5,712,620
5 pesos	1,952,025	3,740,000	1,952,025	3,740,000	2,242,025	3,450,000	1,980,925	3,711,100
10 pesos	7,883,940	7,650,000	6,883,940	8,650,000	6,933,940	8,600,000	6,195,540	9,338,400
20 pesos	3,770,160	2,200,000	4,310,160	1,660,000	4,890,160	1,080,000	5,069,180	900,980
50 pesos	387,550	3,610,000	402,550	3,595,000	437,550	3,560,000	542,150	3,455,400
100 pesos	319,300	3,680,000	299,300	3,700,000	319,300	3,680,000	526,500	3,472,800
500 pesos	1,398,500	1,600,000	648,500	2,350,000	1,848,500	1,150,000	2,348,000	3,650,500

There were received during the fiscal year from the Bureau of Engraving and Printing, Washington, D. C., Philippine certificates of the following denominations and amounts:

2 pesos	₱4,000,000
500 pesos	3,000,000

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The following table shows denominations and amounts of bank notes received by the insular treasurer for issue to the Banco Español-Filipino, under article 28, section 1 of Act No. 1790, which notes the bank is authorized to issue under article 24 of section 1 of the act above cited:

Denomination.	Amount received.	Issued to bank.	Balance in treasury vaults.
5 pesos	₱2,000,000	₱600,000	₱1,400,000
10 pesos	2,000,000	450,000	1,550,000
20 pesos	600,000	60,000	540,000
50 pesos	500,000	60,000	440,000
100 pesos	400,000	40,000	360,000
200 pesos	350,000	40,000	310,000
Total	5,850,000	1,250,000	4,600,000

CERTIFICATES DESTROYED.

During the fiscal year ended June 30, 1908, Philippine certificates, mutilated and worn so as to be unfit for further circulation, were redeemed and destroyed under the provisions of section 10 of Act No. 938 as amended.

The number of certificates destroyed and the amounts thereof were as follows:

Denomination.	Number.	Full value.	Half certificates.	Value.	Date of destruction.
2 pesos	167,789	₱335,578	6	₱6	Sept. 6, 1907.
5 pesos	37,240	186,200	2	5	Do.
10 pesos	27,474	274,740	.....	.....	Do.
20 pesos	1,059	21,180	.....	.....	Do.
50 pesos	15	1,500	.....	.....	Do.
100 pesos	5	500	.....	.....	Do.
500 pesos	1	500	.....	.....	Do.
Total	.....	820,198	.....	11	

CIRCULATION.

The following table shows the total circulation of the islands, with increase or decrease by months, for the fiscal year covered by this report:

Date.	Amount in circulation.	Circulation increase (+) or decrease (−).
July 31, 1907	₱42,167,914.63	−₱646,400.12
August 31, 1907	41,018,008.47	−1,149,906.16
September 30, 1907	40,158,542.67	− 859,465.80
October 31, 1907	40,309,303.95	+ 150,761.28
November 30, 1907	40,547,339.535	+ 238,035.585
December 31, 1907	38,586,997.145	−1,960,342.39
January 31, 1908	38,104,952.045	− 482,045.10
February 29, 1908	38,743,244.015	+ 638,291.97
March 31, 1908	42,297,753.155	+3,554,509.14
April 30, 1908	41,994,632.255	− 303,120.90
May 31, 1908	42,134,676.76	+ 140,044.505
June 30, 1908	40,337,982.04	−1,796,694.72

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EXCHANGE RATES.

In continuation of the table of exchange rates published in the last annual report, the following has been prepared covering the present fiscal year:

London prices of silver and Hongkong and Manila sterling exchange rates, 1907–8.

	London prices standard silver.				Sterling rates in Hongkong, T. T.				Sterling rates in Manila, T. T.			
	High.	Low.	Mean.	Average.	High.	Low.	Mean.	Average.	High.	Low.	Mean.	Average.
1907.												
July	31 15/16	31	31 15/32	31 5/16	26 3/4	26 3/16	26 15/32	26 13/32	24 5/16	24 5/16	24 5/16	24 5/16
August	32 1/4	31 3/16	31 23/32	31 11/16	27	26 3/8	26 9/16	26 3/8	24 5/16	24 5/16	24 5/16	24 5/16
September	31 3/16	31 1/16	31 5/16	31 5/16	26 11/16	26 1/2	26 19/32	26 19/32	24 5/16	24 5/16	24 5/16	24 5/16
October	31 3/16	27 7/16	29 5/16	29 1/8	26 5/8	24 3/8	25 1/2	25 1/4	24 5/16	24 5/16	24 5/16	24 5/16
November	28 1/16	26 1/2	27 9/32	27 1/8	24 3/8	24	24 7/16	24 5/16	24 5/16	24 5/16	24 5/16	24 5/16
December	26 3/4	24 1/4	25 1/2	25 7/16	24	21 1/2	22 3/4	22 7/16	24 5/16	24 5/16	24 5/16	24 5/16
Year	30 5/16	28 11/16	29 7/16	29 5/16	26	24 13/16	25 7/16	25 1/4	24 5/16	24 5/16	24 5/16	24 5/16
1908.												
January	27 1/16	24 7/8	25 15/16	25 11/16	23	22 1/8	22 9/16	22 7/8	24 1/4	24 1/4	24 1/4	24 1/4
February	26 3/8	25 1/2	26 1/16	25 7/8	23 3/16	22 1/2	22 13/16	22 3/4	24 1/4	24 1/4	24 1/4	24 1/4
March	25 13/16	25 7/16	25 5/8	25 9/16	22 3/4	22 7/16	22 19/32	22 9/16	24 1/4	24 1/4	24 1/4	24 1/4
April	25 9/16	24 9/16	25 1/16	25 3/16	22 7/16	22 1/8	22 9/32	22 13/32	24 1/4	24 1/4	24 1/4	24 1/4
May	24 13/16	24	24 13/16	24 5/16	21 3/4	20 15/16	21 5/16	21 1/4	24 1/4	24 1/4	24 1/4	24 1/4
June	25 5/8	24 1/4	24 13/16	24 5/8	22 5/16	21 1/4	21 25/32	21 5/16	24 1/4	24 1/4	24 1/4	24 1/4
Halfyear	25 7/8	24 25/32	25 3/8	25 1/8	22 9/16	21 7/8	22 7/32	22 7/32	24 1/4	24 1/4	24 1/4	24 1/4

Respectfully submitted.

FRANK A. BRANAGAN,
Treasurer, Philippine Islands.

The SECRETARY OF FINANCE AND JUSTICE,
Manila, P. I.

EXHIBIT A.

FIRST PHILIPPINE LEGISLATURE, *Special Session.* — A. B. No. 240.

[No. 1865.]

AN ACT Creating a government agricultural bank of the Philippine Islands and appropriating for funds thereof the sum of one million pesos.

By authority of the United States, be it enacted by the Philippine Legislature, that:

SECTION 1. An agricultural banking corporation, to be known as the "Agricultural Bank of the Philippine Government," is hereby created and established, with its principal office and place of business in the city of Manila.

SEC. 2. The sum of one million pesos is hereby appropriated out of any of the general funds of the insular treasury not otherwise appropriated, as and for the capital of said bank.

SEC. 3. The Agricultural Bank of the Philippine Government is hereby authorized to receive deposits of funds of provinces, municipalities, the Postal Savings Bank, societies, corporations, and private persons, and the Postal Savings Bank and provincial and municipal governments are hereby authorized to make such deposits. Interest to be paid by said bank on deposits so made shall not exceed four per centum per annum.

SEC. 4. The affairs and business of said bank shall be administered by a board of directors, composed of the secretary of finance and justice and in his absence or in the case of his disability the acting secretary of finance and justice, the insular treasurer and in his absence or in the case of his disability

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the acting insular treasurer, and three citizens of the Philippine Islands or of the United States, resident within the Philippine Islands, who shall be appointed by the governor-general by and with the advice and consent of the Philippine Commission. The secretary of finance and justice and in his absence or in case of his disability the acting secretary of finance and justice shall be ex officio president of the board of directors. Three members of the board of directors shall constitute a quorum at any meeting thereof.

SEC. 5. The insular treasurer and in his absence or in case of his disability the acting insular treasurer shall be the manager of said bank, and shall perform the duties of his office in accordance with this act and the by-laws of said bank duly adopted as hereinafter provided.

The official bond of the insular treasurer and in his absence or in case of his disability that of the acting insular treasurer shall be liable for the faithful performance of the duties of such insular treasurer or acting insular treasurer when acting as manager of said bank.

SEC. 6. With the approval of the governor-general, the insular treasurer is authorized to constitute provincial and municipal treasurers agents of said bank, and they shall render such services in the operation of said bank as may be required of them by the insular treasurer. When constituted agents of said bank, provincial and municipal treasurers are charged with official responsibility, and their bonds shall be liable for the faithful performance of their duties as such agents and for the safekeeping and accounting for any money or property of said bank confided to their custody.

The governor-general may, on request of the board of directors of said bank or of the manager thereof, require any officer or employee of the government to perform any service or render any assistance to said bank which he, the said governor-general, may deem proper.

Subject to the civil-service act and rules and the by-laws of said bank, the manager of the bank is authorized to appoint such other personnel as may be necessarily required for the proper operation of said bank. The personnel so appointed by the manager of said bank shall perform the duties and receive the salaries prescribed in the by-laws.

SEC. 7. The attorney-general shall be the legal adviser of said bank, and shall render such legal services to said bank as may be required of him by the manager of said bank or by the board of directors thereof. In the performance of his duties, the attorney-general is authorized to require such services from the provincial fiscals as to him may seem best in the interest of said bank.

SEC. 8. The board of directors is empowered to adopt such by-laws, not in conflict with this act, as may be proper for the prudent and successful operation of said bank, and to amend or repeal the same: *Provided*, That such by-laws, or any amendment or repeal thereof, shall not take effect until the same shall have received the approval of the governor-general.

SEC. 9. The members of the board of directors, appointed as such by the governor-general, shall each receive for each day of meeting of the board actually attended the sum of ten pesos.

SEC. 10. The bank may make loans only for the payment or satisfaction of incumbrances on agricultural lands, for the construction of drainage and irrigation works, and for the purchase of fertilizers, agricultural seeds, machinery, implements, and animals, to be used exclusively by the borrower for agricultural purposes, and no loan shall be made by said bank to any person or corporation not engaged in agricultural pursuits.

SEC. 11. No loan shall be made except upon resolution of the board of directors. No person or corporation shall be permitted to borrow less than fifty pesos nor more than twenty-five thousand pesos: *Provided, however*, That fifty per centum of the capital of said bank shall be set apart for loans of not more than five thousand pesos to any one person or corporation.

SEC. 12. No loan shall be made except—

(*a*) Upon the security of a first mortgage on unincumbered, improved urban property or upon unincumbered agricultural land, not to exceed forty per centum of the value thereof. No loan shall be made unless the attorney-general shall have certified and the board of directors shall be satisfied that the real estate offered as security for the loan is free from all incumbrances and that the title thereto is in the mortgagor. All mortgages shall contain a covenant requiring the mortgagor to insure for the benefit of the mortgagee all buildings of strong materials on the property to the amount of their value as fixed by the board of directors.

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(*b*) Upon the security of a chattel mortgage to the bank on crops already harvested, gathered, and stored: *Provided, however*, That no loan on the security of such crops so harvested, gathered, and stored as aforesaid shall exceed forty per centum of the market value thereof on the date of the loan. The property mortgaged shall be insured by the mortgagor for the benefit of the mortgagee to the full amount of the loan.

SEC. 13. All mortgages on real property and chattel mortgages on harvested, gathered. and stored crops shall be registered with the register of deeds in the jurisdiction where situate, and it shall be the duty of the register of deeds to indorse on such real or chattel mortgage, and on his record thereof, the date and hour of its reception, and such registration with the register of deeds of such real or chattel mortgage shall be notice to all the world of the lien created by such mortgage and of the terms and conditions thereof. The expenses of registration shall be paid by the borrower.

SEC. 14. The bank shall not exact more than ten per centum per annum on any loan made by it.

SEC. 15. Loans shall not be made for a period exceeding ten years, and may be made payable in installments as the board of directors may determine in each case.

SEC. 16. No fee or charge of any kind whatsoever by way of commission shall be exacted or paid for granting or obtaining loans, and any official of the bank exacting, demanding, or receiving any fee for service in obtaining a loan or for the use of his influence to obtain a loan shall be punished by imprisonment for not less than one year nor more than five years, in the discretion of the court.

SEC. 17. Within one year after foreclosure sale of property has been accomplished the mortgagor of the property shall have the right to redeem said property from the bank upon payment of the amount found due by the court in the decree of foreclosure with interest thereon at the rate specified in the mortgage, together with all costs incurred by the bank by reason of the foreclosure and sale and the care of the property.

SEC. 18. The agricultural banking corporation provided for in this act shall have the general powers mentioned in section thirteen of "the corporation law," which are not in conflict or inconsistent with the provisions of this act.

SEC. 19. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

SEC. 20. This act shall take effect on July first, nineteen hundred and eight.

Enacted June 18, 1908.

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EXHIBIT No. 3.

REPORT OF THE INSULAR COLLECTOR OF CUSTOMS.

OFFICE OF THE INSULAR COLLECTOR OF CUSTOMS,
Manila, June 30, 1908.

SIR: I have the honor to submit herewith the following report covering the operations of the bureau of customs during the fiscal year 1908, showing also, for the purpose of comparison, certain other data with respect to Philippine commerce, customs transactions, and immigration, since American occupation.

GENERAL TRADE CONDITIONS.

The fiscal year closed with this date has been one of world-wide financial depression, as exhibited by the decline in both foreign and domestic trade of nearly every country the commerce of which is a noticeable factor in the world's balance sheet. It is therefore gratifying to find that the Philippine Islands have not only held their own, but closed the year with an increased volume of trade. This result is not attributable to any manipulation of figures, or series of incidents favorable to Philippine trade, but, on the contrary, obtains in the face of adverse conditions arising from the general depression. It is directly due to advanced industry in the islands, as is clearly shown by the fact that the exportations of each of the principal products—hemp, sugar, and copra—except tobacco, were substantially increased in quantity, which prevented the decline in the total value of trade that would have taken place had the country been at a standstill in the matter of production.

The total value of foreign trade for the year aggregated $63,748,561, an increase of $1,240,731 over 1907, and exceeding in value that of any previous year in the history of the islands, except 1903, when the total values were shown as slightly in excess of $66,000,000.

BALANCE OF TRADE.

The value of merchandise purchased abroad was $30,918,745, against local products exported to the value of $32,829,816, leaving a balance of trade in favor of the islands of $1,911,071, thus reducing the total balance which had accumulated on the other side since American occupation, and prior to 1905, to $2,175,450, and the average balance of trade in favor of importation during the past ten years to $217,545. (See Exhibit B, Statement No. 6.) Comparing the trade of 1908 with that of 1907, when the value of commercial imports was $28,786,063 and of exports $33,721,767, an increase is found in the former of $2,132,682 and in the latter a decrease of $891,951.

EXCLUSION OF GOVERNMENT AND RAILWAY SUPPLIES AND EQUIPMENT.

The volume of trade shown for the fiscal year 1908 includes only current commercial transactions, exclusive of currency shipments, and is not swollen by the inclusion of supplies and equipment of exceptional character imported free of duty for either the federal or insular governments or by the railway companies under the terms of Act No. 1566 of the Philippine Commission. The quantities and classes of supplies and equipment imported in commercial vessels for the federal and insular governments are shown in Statement No. 15 of Exhibit B.[a] The values of these articles have not been and are not now

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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available for the reason that the corresponding entries have not been accompanied by invoices. A supplementary table to this statement, furnished through the kindness of the officers in charge of the various receiving departments, shows the class and weight of supplies imported for the United States Army in transports. The value of supplies and construction material imported by the railway companies, under the act mentioned in the preceding paragraph, is more than treble that of 1907, the total being $2,777,817, against $879,759 for the preceding year. The details of these importations are shown in Table No. 2, Statement No. 14.[a]

RICE BALANCE OF TRADE.

The main obstacle to wiping out the balance of trade against the islands, which should, under normal conditions, be large creditors in the world's markets, has been the forced importation of rice, on account of the inability, through loss of work animals and other local misfortunes, to produce this principal article of food at home in sufficient quantities to supply the necessities.

During the past ten years $60,088,108—almost double the entire circulating medium of the country, and equivalent to approximately $7.50 (₱15) for each inhabitant of the islands—has been sent to the East Indies for the purchase of rice. The total importations of this period amounted to 1,838,917 tons, representing in value over 21 per cent of the entire purchases abroad. It is true that such importations have diminished since 1904, when they reached $11,548,814, the highest of any one year, but they are still proportionately enormous, amounting to $5,861,256 during the fiscal year 1908, or 19 per cent of all imports, an increase of $2,198,763 over those of 1907. And when it is understood that an expenditure, including cost and charges before reaching the consumer, of something more than $100,000,000 has been made upon foreign rice during ten years, an average of say $10,000,000 per annum, of which no less than $8,778,715 was expended during the fiscal year under discussion, in a country the climate and soil of which are adapted to the profitable production of this article, the serious side of this trade condition is apparent. Every dollar so expended, if devoted to a home product, would add to the prosperity and wealth of the people instead of operating as a drain upon their resources as at present, and add to the means of developing both foreign and domestic trade in other lines.

The problem, therefore, of obliterating this average annual trade debit of more than $6,000,000, and of converting the national necessity involved, from a continual loss into a public benefit, deserves exhaustive study and energetic treatment.

OTHER ARTICLES IMPORTED SUITABLE TO LOCAL PRODUCTION.

There are also many other articles imported which can be profitably produced or manufactured at home. These, taken separately, seem trivial in importance when compared with rice, but in the aggregate their value has no slight bearing upon the balance of trade. Particularly noticeable among such articles are fresh eggs, vegetables, beef, pork, lard, coffee, cocoa, refined sugar, rope, and manufactures of wood, the total value of which imported during the past year amounted to $2,030,931. It seems hardly credible that the equivalent of more than two millions and a half of gold dollars have been sent away from the islands in the past ten years ($253,665 during 1908) in exchange for fresh eggs, because they were not to be had at home at the high prices prevailing, nor that substantially $15,000,000 were paid to foreign countries during the same period for the small group of articles named in this paragraph; yet such are the facts, suggesting that many business opportunities, requiring but moderate capital, are open, which would be profitable alike to those taking advantage of them and to the community at large.

HEMP.

The controlling factor in the years' trade, which has prevented the large increase in values that might have been expected from the greater quantities of products exported, was the unprecedented decline in the price of hemp, due, no doubt, to the contraction of business abroad resulting from widespread financial depression. During the past ten years this product has furnished an average of 62 per cent of the values of all exports, the average annual shipments having been invoiced at $17,136,004, representing yearly exportations of 107,884 tons.

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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The returns of 1908, however, show that, while the quantity exported was 6,121 tons above the average annual exportation since 1898, the percentage of value to the total exports had fallen to 52.7. This precipitate decline in values is made distinctly apparent by comparing the figures of 1907 with those of 1908. During the former year the 112,895 tons were invoiced at $21,085,081, while the larger shipment of 114,005 tons in 1908 was valued at but $17,311,808, indicating a reduction in value of $3,773,273, against an increase in quantity of 1,110 tons. The price of hemp opened at the beginning of the year with the lowest range of prices quoted in years, current being sold at $140 per ton, and steadily declined until March, 1908, when the price quoted was but $72, a further reduction in value of 48.5 per cent in nine months. A slight recovery occurred in April, when the quotations rose to $96, but the fluctuation was only temporary, and the year closed with hemp selling at $89 per ton. This is in marked contrast with the average price during the last ten years of $158.84, and especially the years 1905, 1906, and 1907, when prices generally ranged from $160 to $176, the lowest being $132 in 1907, and the highest $184 per ton, the latter price having been reached during January, 1906.

SUGAR.

On the other hand, sugar, which is the second product of importance, both in value and tonnage, aided in sustaining the volume of trade by an increased exportation as well as proportionate value, over the quantity and value of that article marketed during the preceding year. The average quantity of sugar exported annually since 1898 has been 89,994 tons, from which the average yearly receipts were $3,464,027, constituting 13 per cent of the total export values.

The production of sugar in the Philippine Islands began in 1856, and for several years after it became a substantial factor in the commerce of the islands the profits of the industry were proportionately large. During this period no efforts were spared to increase the output to the utmost extent, but, owing to local conditions, the annual production was never forced much beyond the normal crop of from 150,000 to 175,000 tons. The most successful years, in point of production, were 1902 and 1903, when the total annual exports were approximately 250,000 tons. But in recent years, since Philippine sugar has been practically excluded, by tariff barriers and bounties, from the most profitable markets, the lot of producers has been a precarious one indeed, and their profits, when such were realized, distressingly small. Although this experience has been a trying one, the result, in combination with other conditions anticipated, should prove a permanent benefit to the industry in future, as the small returns realized from shipments to other countries have led to the introduction of sugar, as a staple commodity, into the interior of China, with its millions of consumers, where its use was practically unknown twenty-five years ago. But Chinese buyers will not pay more for Philippine sugar than it is worth for shipment to other markets, understanding perfectly well that by offering the equivalent of European or American market values (whichever happens to be the higher), less freight, and other expenses attendant upon the long shipments to those markets, they will usually be given the preference, because their market is within easy reach, settlements are more easily and quickly made, and they ask no questions about polarization, sugar being bought and sold in China entirely upon its color.

That China is the natural market for Philippine sugar, and that it will continue to be absorbed in that country, at prices fixed by competition, in exchange for the many articles which China furnishes for Philippine consumption, is clearly indicated by the sugar movements of the present year. When the shortage of crops in other parts of the world became known, and the price of sugar rapidly rose in Western markets, a few cargoes were sent to the United States on speculation, but as soon as the Chinese buyers found that the rise in value was a fact, they immediately responded by offering its equivalent, and since then practically all shipments have gone to China, which received 52 per cent of the entire exportations of the year.

In order to turn this important trade with China into a permanently profitable factor of Philippine commerce, we must have the regular competition of better offers than are usually possible for shipment elsewhere; and it has been in the confident belief that this relief would be extended by Congress, through the removal of the tariff upon Philippine sugar entering the mainland territory, that producers have continued operations and even endeavored to increase their output.

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In view of the fact that the United States pays annually $100,000,000, or more, for sugar produced in foreign lands (not including purchases from Porto Rico and Hawaii amounting to over $45,000,000), while the entire Philippine crop, in the year of greatest production and at the highest price, was worth less than $10,000,000, and if exported exclusively to the United States (an improbability under any circumstances), would have replaced less than 10 per cent of the foreign sugar used, it seems reasonable to believe that the removal of the import duties upon sugar produced in the Philippine Islands will not be long denied when the conditions become generally known. The total average value of sugar exported annually from the Philippine Islands during the ten years since American occupation, as shown above, was less than 3½ per cent of the value of foreign sugar consumed annually in the United States. Most of the shipments of sugar to the United States since 1898, which have been comparatively small, have been on speculation, usually resulting disastrously to the shippers.

During the last year the sugar exportations aggregated 149,323 tons, valued at $5,664,666, an increase of 30,928 tons and of $1,730,206 in value over those of 1907, being the highest record in sugar transactions since 1898.

COPRA.

Copra (dried cocoanut meat) closely follows sugar in importance as an article of export, furnishing 16.6 per cent of the total value of all shipments to foreign countries.

During the last ten years 496,354 tons of this product have been sold abroad for $28,650,766, indicating an average annual exportation of 49,635 tons, at a value of $2,865,076, while the exportations of 1908 aggregated 75,257 tons, invoiced at $5,461,680, an increase in quantity of approximately 50 per cent over the average yearly shipments, and a still greater increase over the year 1907, when 48,306 tons, valued at $4,053,193, represented the foreign sales.

The price at which the product was marketed, however, did not escape the general decline in values, the average receipts per ton for 1908 having been $72.70 against $83.49 for 1907 a reduction of 13 per cent. But as the prices of 1907 were abnormally high, the sharp decline of from $97.45 per ton at the beginning of 1908 to $60.36 at the close, left the product still selling at a fair profit and not far below the average prices of previous years.

COCOANUT OIL.

In connection with the increased production of copra, as indicated by the exports, it is interesting to note that the local consumption is also increasing with rapid strides. Prior to 1906 copra was only exported in the raw state, and none of the manufactured products of the cocoanut are to be found among the foreign sales. During that year, however, a local mill for the manufacture of cocoanut oil was established in Manila and exported 105,942 gallons. Owing to difficulties experienced in securing proper containers, the output was increased less than 4,000 gallons during 1907, but that difficulty having been overcome, the exports of 1908 were increased nearly sevenfold, reaching the substantial quantity of 709,239 gallons, valued at $263,069, and representing a home consumption of 5,325 tons of copra. The indications are that this new industry is now firmly established, and that it will eventually lead to the manufacture for export of the many products derivable from the cocoanut, thus insuring to the islands the greatest degree of benefit from this important product. The oil now exported finds profitable markets in the United States and the United Kingdom, and goes exclusively to those countries.

TOBACCO.

Although the total exportations of tobacco showed a falling off in value from $3,129,194, during 1907, to $2,714,546 in 1908, a net loss of $414,648, they were still higher than any previous year since American occupation. The decreased value in foreign sales was principally in the unmanufactured product, 6,868,179 pounds less having been shipped than during 1907, the total exportations of 1908 being 23,264,901 pounds, valued at $1,592,123, against 30,133,080 pounds, valued at $1,973,305, shipped during the previous year. The shipments of cigarettes, although of minor importance, also showed a marked decline from 152,777,000, valued at $104,268, in 1907, the largest sales of any year up to that time, to 60,904,000, invoiced at $38,345, during the present year; while the foreign sales

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of cigars were increased from 116,719,000, at $1,051,621, to 117,564,000, at $1,084,78, representing the largest exportation of any year since 1903.

The reduction in exports of unmanufactured tobacco from 1907 was attributable principally to the difference in crops between 1906 and 1907, the former, which was consumed or shipped in 1907, having been estimated at 37,500,000 pounds, the largest in ten years, while the latter, marketed during 1908, reached but 30,800,000 pounds. Another influence which tended to reduce the foreign sales of the unmanufactured product was the greater quantity consumed in the islands in cigars and cigarettes. The total number of cigars consumed at home during 1908 was approximately 3,510,000 greater than that of 1907, while the local consumption of cigarettes increased more than 264,000,000, a quantity nearly double the large exportation of last year, and more than four times as many as were sent abroad during 1908.

The invoice values indicate that the prices received for cigars and unmanufactured tobacco exported were generally higher than those of previous years, while cigarettes have slightly but steadily declined in value. The prices thus shown are as follows: For unmanufactured tobacco, per pound, average for ten years, $0.063; for 1907, $0.065; for 1908, $0.068; cigars, per 1,000, average for ten years, $8.78; for 1907, $9.01; for 1908, $9.31; cigarettes, per 1,000, average for ten years, $0.767; for 1907, $0.682; for 1908, $0.63.

MOVEMENTS AND INCREASE OF CURRENCY.

The total foreign movements of coins and currency during 1908 (values expressed in United States currency) amounted to $16,824,105, representing imports valued at $8,781,548, against exports at $8,042,557, showing an excess of imports over exports to the value of $738,991. The imports consisted of ₱17,201,000 of the last Philippine coinage received by the Treasury, and ₱362,096 miscellaneous currency brought in through commercial channels; while the exports were made up of ₱37,828 of the first, and ₱15,905,000 of the last Philippine coinage, Mexican pesos and Spanish currency valued at $45,612, shipped by the government, and United States currency and English gold to the value of $25,531, sent and taken abroad by private persons.

The balance between the importations and exportations of coins and currency since 1902, when the first Philippine currency was received, shows an excess of imports over exports to the value of $9,381,519, indicating an addition to the currency of the country since 1901 of ₱18,763,038, or a per capita increase of ₱2.34, thus bringing the currency of the islands up to an equivalent of about ₱8 ($4) per capita, which is considerably larger than that of any other eastern country.

The details of the imports and exports of coins and currency are shown by Statement No. 7 of the Appendix.

FINANCIAL TRANSACTIONS.

GROSS RECEIPTS.

In harmony with the greater volume of business transacted, the gross receipts of the bureau at all ports exceeded those of 1907 by $123,311.87, the collections of 1908 aggregating $8,318,020.39, against $8,194,708.52 for the previous year, being $665,582.80 greater than the average annual collections of the past ten years, and but slightly less than the annual recipts recorded during 1901–1904.

The increases in collections over the previous year were represented by increased receipts from import duties of $50,683, export duties $16,199.02, wharfage dues $42,899.82, immigration dues $15,986.50, storage $4,890.84, and miscellaneous collections $7,404.83; while a decrease of $2,206.55 is shown in the coastwise tonnage tax, and $10,712.77 in foreign tonnage collections, the latter having been entirely abolished by Act No. 1535 of the Philippine Commission, which became effective September 1, 1906, since which date no collections from this source have been made.

The monthly collections of the year indicate the general trend of business, and show that, although an excellent beginning was made, the commerce of the islands did not entirely escape the effects of the general depression during the last quarter. The average receipts for the first nine months were $704,430.95, with an average falling off during the last quarter of $46,745.35. However, a factor not to be overlooked, in its effects upon the revenue, was the discontinuance of lawful opium importations, which took place, in pursuance of

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Act No. 1761 of the Philippine Commission, March 1, 1908, and caused a net loss in receipts, basing the calculation upon the collections from that drug during the last five years, of $236,698.40. The average annual receipts from this source during the years 1903–1907, inclusive, were $328,864.40, whereas those of 1908, all collected prior to March 1, amounted to but $92,126.

The total receipts of the year were derived from the following sources, and for the purpose of showing later the cost of collecting the customs revenue, upon the basis adopted in the United States, items not included, or analogous to those included under the heading of "Customs revenue" in that country, are aggregated under the general heading "Other receipts:"

Receipts.

Customs receipts:		
Import duty	$6,692,079.06	
Export duty	1,170,087.08	
Wharfage dues	278,760.16	
Storage collections	10,829.98	
Sale of customs stamps	35,925.80	
		$8,187,682.08
Other receipts:		
Immigration collections	35,622.00	
For licenses of vessels	43,468.07	
For fines, penalties, etc	4,896.05	
Sale of blank forms	1,067.88	
Miscellaneous fees (official fee stamps affixed to official documents)	16,164.33	
Surplus from auction sales	2,460.56	
Extra services (refundable)	17,437.25	
Salaries, storekeepers, bonded warehouses (refundable)	3,149.22	
Miscellaneous collections (including sale of property, etc.)	6,072.95	
		130,338.31
Total receipts (see Statement No. 1)		8,318,020.39

Of the total gross receipts shown $181,556.25 were collected on account of the Moro Province, at the entry ports therein, and delivered in full to the government of said province, while the remainder, amounting to $8,136,464.14, accrued to the general insular government, and was turned into its treasury as collected. The details of this division, as well as all other data afforded by the records with respect to receipts, are shown in Exhibit A of the Appendix. The receipts of the various entry ports are also discussed hereafter under their respective headings.

EXPENDITURES.

The total expenditures of the bureau for all purposes and at all ports during the fiscal year 1908 were $451,463.13, a decrease of $9,648.32 from those of 1907, although the volume of business transacted has been considerably larger. Of these expenditures, $22,528.64 were chargeable against the Moro Province for maintenance of the service therein (except customs cutters), and were paid from the treasury of that province, the remainder, $428,934.49, having been paid from appropriations by the insular government. It is interesting to note, in connection with the expenditures of the year under discussion, that they are $112,000.66, or 20 per cent less than those of 1904, since which year they have been reduced annually until the limit of economy compatible with the proper performance of the several functions of the bureau with its present equipment seems to have been reached.

As shown by the following condensed statement, $314,121.14 were expended during 1908 in the collection of the customs revenue, and are therefore chargeable as cost of collection, while $137,341.99 were disbursed in connection with the other functions of the bureau not pertaining to the customs proper. The method employed in the segregation of expenditures is hereafter explained under the head of "Accounting system."

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Expenditures.

Customs expenses:		
Salaries of employees engaged in connection with the collection of customs revenue, cost of expendable supplies, and all other expenses in connection therewith		$314,121.14
Other expenses:		
Revenue-cutter service—Salaries of employees, cost of supplies, repairs, and miscellaneous expenses in connection therewith	$30,376.10	
Harbor launch service, Manila, Iloilo, and Cebu—Salaries of employees, cost of supplies, repairs, and miscellaneous expenses in connection therewith	34,315.48	
Immigration service—Salaries of employees, cost of supplies, and miscellaneous expenses in connection therewith	26,813.48	
Miscellaneous expenses—Cost of permanent equipment, licensing and admeasurement of vessels, inspection of hulls and boilers, custody of buildings, statistical work, etc	45,836.93	
Total other expenses		137,341.99
Total expenditures (see Statement No. 1)		451,463.13

COST OF COLLECTION.

From this statement and that under the heading of "Gross receipts" it will be seen that the bases for ascertaining the cost of collecting each dollar of the customs revenue following the practice in the United States, are the customs receipts proper, excluding all collections foreign thereto, amounting to $8,187,682.08, and the expenditures pertaining to the collection of same, $314,121.14. The following table shows such receipts and expenditures throughout the islands and the corresponding cost of collection at the several entry ports:

Customs receipts, expenditures, and cost of collection.

Port.	Receipts.	Expenditures.	Cost of collecting each dollar.
Manila	$6,455,727.29	$241,801.59	$0.0375
Cebu	862,638.97	24,203.80	.0281
Iloilo	687,455.54	23,223.64	.0338
Balabac	3,350.55	2,363.47	.7053
Total, insular government ports	8,009,172.35	291,592.50	.0364
Jolo	76,678.92	9,216.41	.1201
Zamboanga	99,136.60	9,121.01	.0920
Bongao	53.65	379.31	7.0700
Jurata	1,223.92	1,908.15	1.5590
Sitanki	1,416.64	1,903.76	1.3430
Total, Moro Province ports	178,509.73	22,528.64	.1260
Total, all ports	8,187,682.08	314,121.14	.0383

As may be seen by reference to the United States Treasury report for 1907, page 112 et seq., the general cost of collection thus shown is materially less than that in any other noncontiguous territory of the United States; and substantially less at the port of Manila than at any port of the United States the business of which is comparable to that of Manila.

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REFUNDABLE EXPORT DUTIES.

The $1,170,087.08 collected as duty on exports during the fiscal year includes $370,513.36 subject to refund under the provisions of section 2 of the Act of Congress of March 8, 1902, upon the submission of proof that the products upon which the duty was paid were shipped by continuous voyage to, and consumed in, the United States. (See Statement No. 4.) The refund of such a sum is no slight loss to the revenue, and is sustained without benefit to either the producers or exporters in the Philippine Islands, as the amounts refunded go directly to the purchasers in the United States as a premium upon the purchase of necessary raw materials, a large portion of which can not be obtained elsewhere. The export duties collected annually, during the last six years, upon Philippine products shipped to the United States, which were refundable under the act cited, averaged $452,366.85, and aggregate $2,785,265.91 since the law became effective. The following table shows the export duty subject to refund, by years, from 1902 to 1908, inclusive:

Fiscal year.	Manila.	Cebu.	Total.
1902	$35,346.83	$35,717.86	$71,064.69
1903	410,946.43	116,281.67	527,228.10
1904	378,213.07	84,220.76	462,433.83
1905	376,195.12	110,380.44	486,575.56
1906	347,296.13	86,695.66	433,991.79
1907	327,836.82	105,621.76	433,458.58
1908	245,854.11	124,659.25	370,513.36
Total	2,121,688.51	663,577.40	2,785,265.91

In the absence of other legislation correcting this condition, the repeal of that portion of the Act of Congress approved March 8, 1902, under which these refunds are made is, in harmony with the continuous attitude of this office, recommended.

REFUNDS MADE.

The refunds actually made during a fiscal year do not necessarily affect the revenues thereof, as they may be payable from revenues collected and set aside for that purpose during previous years, or from general funds not otherwise appropriated. A statement, however, of the sums paid out of the treasury on account of refundable customs collections is of interest in its general bearing upon the financial transactions of the bureau.

The refunds made during the fiscal year 1908, under the provisions of the Act of Congress of March 8, 1902, of export duties previously collected on hemp amounted to $410,534.95, and on copra to $2,155.64. In addition to these amounts, $5,307.64, which had been paid by exporters upon intended shipments, were refunded because the goods upon which the duty had been paid were finally, for some reason, not exported.

Refunds of duties paid on imported merchandise amounting to $33,801.79 were made during the year. Of this amount, $16,261.25 represented duty paid by importers upon coal, which, having been used for fuel on board steam vessels, entitled the importers to a corresponding refund under the provisions of section 224 of Act No. 355. Duties which had been paid on materials imported and used in the manufacture of articles afterwards exported from the Philippine Islands, and therefore, under the provisions of section 23 of the tariff revision law of 1905, subject to drawback, were refunded to the amount of $297.29. The sum of $6,074.77, having been provisionally collected as import duty on containers entitled to free entry under paragraph 391 of the tariff revision law, as construed by Tariff Decision Circular No. 716, was refunded upon their reexportation. Excess import duties in the sum of $11,168.48 were, after the filing of protests by importers, decision of proper authority, and reliquidation, repaid to claimants. Refunds were also made from collections of wharfage dues amounting to $1,242.23; immigration dues, $224; receipts from operation,

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$162.29; and from miscellaneous collections, including fees, fines, tonnage dues, etc., $181.50, as shown in the following statement:

Refunds made during the fiscal year 1908.

Export duties refunded on account of:		
Hemp shipments to United States	$410,534.94	
Copra shipments to United States	2,155.64	
Short shipments	5,307.64	
Total export duties refunded		$417,998.22
Import duties refunded on account of:		
Coal used in vessels	16,261.25	
Drawbacks	297.29	
Reexported casks	6,074.77	
Excess duties	11,168.48	
Total import duties refunded		33,801.79
All other collections refunded:		
Wharfage dues		1,242.23
Immigration dues		224.00
Receipts from operation		162.29
Miscellaneous		181.50
Total amount of all refunds		453,610.03

IMPORTS.

The merchandise imported into the Philippine Islands during the fiscal year 1908 comprised manufactured articles and natural products from many and widely distributed sources throughout the world. The country of origin and the market value therein of each class of goods received are indicated by the sworn statements in consular invoices submitted upon entry of each consignment.

GENERAL ORIGIN.

According to the data afforded by the customs records based upon such invoices, the total value of commercial importations during the year under discussion was $30,918,745, and was distributed among the various countries in which the merchandise represented thereby originated, as indicated by the following statement:

Country of origin.	Value of merchandise received.	Percentage of total value.	Country of origin.	Value of merchandise received.	Percentage of total value.
United Kingdom	$6,109,586	19.7	France	$821,348	2.5
French East Indies	5,746,414	18.5	Switzerland	751,524	2.4
United States	5,079,670	16.4	Hongkong	463,970	1.5
China	2,499,169	8.0	Belgium	342,365	1.1
British Australasia	2,046,039	6.6	Siam	307,507	1.0
Germany	1,933,808	6.2	All other imports	811,918	2.6
Spain	1,654,480	5.3			
British East Indies	1,239,084	4.7	Total	30,918,745	
Japan	1,111,863	3.5			

The large quantity of cotton goods, in addition to the general merchandise received from the United Kingdom, is chiefly responsible for the position of that country at the head of the list, while the value representing importations from the French East Indies is due almost entirely to the large amount of rice received from Saigon. Importations covering nearly all classes of commodities contributed to the value credited to the United States, while the import values for the Chinese and Australian trade largely represent meats, vegetables, and other provisions purchased in the markets of those countries. The values assigned to other countries embrace numerous classes of merchandise, as shown in detail by Statement No. 21, annexed.[a]

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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PRINCIPAL CLASSES.

The principal classes of merchandise purchased abroad and their proportion of the total value of imports were as follows:

Principal classes of merchandise imported.	Invoice value.	Percentage of total value of imports.
Cotton goods	$8,011,834	25.9
Rice	5,861,256	18.9
Manufactures of iron and steel	2,164,907	7.0
Provisions, including meat and dairy products	1,520,369	4.9
Cattle, live	1,055,236	3.4
Flour	1,044,570	3.3
Illuminating oil	806,112	2.6
Manufactures of leather	671,962	2.1
Manufactures of vegetable fibers	614,139	2.0
Chemicals, drugs, and dyes	568,916	1.8
Coal	567,220	1.8

INCREASE IN VALUE OF IMPORTS, 1908.

The total value of imports—exclusive of currency (Statement No. 7), merchandise imported free of duty under the provisions of Act No. 1566, for railway construction and equipment (Statement No. 14, Table No. 2),[a] and supplies for the insular government and United States military and naval forces (Statement No. 15)[a]—during the fiscal year 1907 aggregated $28,786,063, and during 1908 increased to $30,918,745.

EFFECT OF VALUE OF PRINCIPAL CLASSES ON TOTAL VALUE.

The gain of $2,132,682 indicated by these values was due principally to marked increases in importations of food supplies (especially rice), while there appears to have been a general decrease in nearly all other classes of commodities imported.

Merchandise consisting of articles of first necessity—i. e., cotton goods, rice, meats and dairy products, flour, etc.—contributed more than 50 per cent to the value of importations during the year. The value of cotton goods, $8,011,834, which constituted 25.9 per cent of the total import value, was $404,412 less than the value of that class of merchandise imported in 1907, while importations of rice, meats, dairy products, and flour, aggregating in value $8,426,195, or 27 per cent of the total import value, show an increase over the corresponding import values of the previous year of $2,623,554, the net gain having been due to an increase of $2,198,763 in the value of rice, $155,396 in the value of flour, and $269,295 in the value of miscellaneous provisions. The other chief imports were manufactures of iron and steel, aggregating $2,164,907 in value, or $380,000 less than during the previous year; importations of cattle, represented by a value of $1,055,236, which shows a decrease of $3,588 from 1907; and wheat flour, valued at $1,044,570.

COTTON GOODS.

The decrease of $454,431 in the value of American cotton goods received during 1908 affected the total value of importations of this class of merchandise to such an extent as to produce a net decrease therein from the 1907 value of $404,412. Notwithstanding the decrease in the 1908 cotton-trade value, it was still $1,096,899 above the annual values for the past five years, which were:

1904	$4,962,354
1905	6,429,873
1906	6,754,369
1907	8,416,246
1908	8,011,834
Total	34,574,676
Annual average	6,914,935

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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According to import returns the United Kingdom continues to lead in the cotton trade, with a valuation upon its goods of $4,161,487, or 52 per cent of the total value of cotton goods received during 1908. The figures representing this trade for the past year, when compared with those of 1904, show the total receipts to have been increased 61 per cent in favor principally of British goods, but benefiting as well the products of other countries, except Spain and British East Indies, as shown below:

Source of cotton goods.	1904.		1908.		Increase (+) or decrease (−) 1908 over values for 1904.
	Value of imports.	Proportion of total value.	Value of imports.	Proportion of total value.	
		Per cent.		*Per cent.*	*Per cent.*
United Kingdom	$2,216,776	45	$4,161,487	52	+ 87
United States	361,226	7	685,919	9	+ 89
Switzerland	358,206	7	616,652	8	+ 71
Spain	761,578	15	592,770	7	− 22
Japan	191,560	4	515,615	6	+169
Germany	277,689	6	502,223	6	+ 80
British East Indies	358,630	7	312,276	4	− 12
All other countries	436,689	9	624,892	8	+ 43
Total	4,962,354	100	8,011,834	100	+ 61

The particular classes of goods, and the proportions thereof, contributing to this trade during the two years, together with the percentage of increase or decrease in each class, appear in the following table, indicating a predominance of cotton cloths, yarns, threads, and knit fabrics, and notable increases in all classes except wearing apparel, carpets, quiltings and piqués, and cotton waste. The marked increase in the raw cotton and thread receipts is associated with a gratifying expansion in the local manufacture of cotton textiles, resulting in a greater demand for such materials.

Class.	1904.		1908.		Increase (+) or decrease (−) 1908 over values for 1904.
	Value of imports.	Proportion of total value.	Value of imports.	Proportion of total value.	
		Per cent.		*Per cent.*	*Per cent.*
Cloths	$3,092,476	63	$5,323,732	67	+ 72
Yarns and thread	779,910	16	1,218,916	15	+ 56
Knit fabrics	594,308	12	753,658	10	+ 26
Wearing apparel	199,697	4	131,831	2	− 34
Tulles and laces	50,470	1	107,619	1	+113
Cotton, raw	42,514	1	102,439	1	+140
Velveteens and corduroys	13,785	.....	16,944	.....	+ 22
Waste, cops and mill	15,636	.....	11,975	.....	− 23
Quiltings and piqués	23,185	.....	9,138	.....	− 60
Carpets	463	.....	210	.....	− 55
All other cotton	149,910	3	335,372	4	+123
Total	4,962,354	100	8,011,834	100	+ 61

The prestige in the local market of British cotton textiles is attributed to the particular attention devoted by British manufacturers, of this as well as other lines, to the production of those classes and qualities best adapted to the requirements. The trade in white cotton goods, such as shirtings, sheetings, drills, handkerchief goods, cotton textiles for general household use, and wearing apparel of English make, in comparison with that in similar goods of other origin, is conspicuous in volume and has long retained its hold on the local market.

The decline, during 1908, in importations from the United States was due to an oversupply of American cottons received during 1907 rather than to a decrease in the local demand, which, especially in cotton prints, is apparently

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firm, and as soon as the stocks on hand are released a healthy increase in importations is expected. The trade in miscellaneous lines of American make is steady, and there is always a good market for novelty goods suited to the peculiarities of climate and conditions.

With the exception of American cotton prints, which have to a certain extent supplanted those of other makes, no determined effort seems to have been made to introduce these goods, and consequently the foothold acquired by lines other than those mentioned is due principally to the demand of American residents, and also, as in the case of made-up articles such as shirts, collars, and other haberdasher's furnishings, to their general superiority in attractiveness, quality, and relatively favorable value as compared with the similar articles of other origin with which they come into competition.

The total value of cotton textiles imported from Spain during 1908 was $592,770, or 22 per cent lower than that of 1904, and although the cotton trade with that country was slightly stimulated during 1905, 1906, and 1907, the 1908 value was 28 per cent lower than that of the preceding year. The importation and use of Spanish prints prior to 1899 was quite extensive, but as the superiority and relatively low price of American goods became known to the local trade they gradually commenced to take the place of those from Spain. The higher grades of Spanish cotton goods, such as ginghams, checks, plaids, and percales, however, are popular among the wealthier class of purchasers, and retain a hold on the market.

Swiss cotton textiles received during 1908 were invoiced at $616,652, showing a continued growth in the particular lines obtained from that source, which consist principally of cotton embroideries, insertions, and muslins, used extensively throughout the islands, and fill a requirement that no other textiles, except certain English substitutes, have been able to meet.

A greater demand for high grade cotton knitted goods has resulted in increased receipts from Germany. Importations of German cotton goods during 1908 are represented by a value of $502,223, or an increase of $38,706 over the 1907 value. In this particular line of goods German manufacturers have succeeded in furnishing a product of superior quality and of a weight better adapted to local climatic conditions than any others.

Japan's advance in the trade in cotton goods is attributed principally to an increasing call for Japanese bleached and colored crape textiles, and weaving yarns, both mule and twisted. Receipts from that country during 1908 were valued at $515,615, as against $394,976 for 1907, importations therefrom having increased 169 per cent during the past four years. The Japanese crape has during recent years gained a popularity on account of its light weight, peculiar texture, and consequent adaptability for use as shirting and as material for other light tropical wearing apparel, that gives it a strong advantage over competing textiles. It is interesting to note, in this connection, that Japanese cotton textiles are principally made from raw cotton grown in the United States. Japanese weaving yarns have, to a large extent, supplied the increasing demands of local textile manufacturers.

The British East Indian cotton trade, valued at $312,276, has declined during the past three years, as a result of competition with the cheaper goods from Japan. In addition to the decrease in the trade in its better class of cottons, the output of local factories has replaced to a considerable extent British East Indian importations of the more common grades, such as blue and gray trouserings, prison stripes, and similar coarse weaves.

RICE.

Rice importations during 1908 aggregated $5,861,256 in value, or 19 per cent of the value of importations of all kinds, and amounted in quantity to 357,532,514 pounds, representing an increase over the quantity imported during the previous year of 43 per cent. (See Statement No. 21.)[a] Rice from the French and British East Indies and Siam of a lower grade than that produced elsewhere, and therefore cheaper, continued to constitute the bulk of this trade. Importations from the French East Indies amounted to 336,156,116 pounds, an increase over receipts from that source during the previous year of 101,474,612 pounds; Siamese rice imported aggregated 18,562,337 pounds, representing an increase of 6,877,904, while the British East Indies contributed 2,660,258 pounds, as against 2,137,521 received from that source during 1907. The re-

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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mainder of the rice imports is represented by smaller quantities, than those mentioned above, from Spain, Japan, and the Dutch East Indies, which, however, indicate an increase in each instance over importations from those sources during 1907.

The quantity of rice imported into the Philippine Islands, and duty collected thereon, by fiscal years, 1899 to 1908 are represented by the following figures:

Fiscal year.	Pounds.	Value.	Duty.
1899	128,725,790	$1,939,122	$374,602
1900	242,311,382	3,113,423	662,542
1901	392,932,908	5,490,958	1,128,694
1902	477,087,198	6,578,481	1,174,058
1903	677,238,895	10,061,323	1,535,593
1904	727,139,614	11,548,814	1,650,720
1905	563,285,346	7,456,738	1,311,496
1906	304,351,232	4,375,500	1,049,269
1907	248,568,399	3,662,493	845,791
1908	357,532,514	5,861,256	1,254,515
Total	4,119,173,268	60,088,108	10,987,280

In addition to the above commercial importations, 6,163,400 pounds of rice were entered free of duty on account of the insular government (see Statement No. 15)[a] during 1908, bringing the total quantity received during that year to 363,695,914 pounds.

IRON AND STEEL, AND MANUFACTURES OF.

Thirty-seven per cent of the value of the iron and steel trade during 1908 covered American manufactures, as against 34 per cent in 1907, although a comparison of the total value of receipts from all sources, aggregating $2,164,907, or 7 per cent of the total value of commercial importations of all commodities, with the receipts of manufactures of iron and steel during 1907, valued at $2,544,992 (see Statements Nos. 8 and 21),[a] shows a decrease in the value of this class of merchandise imported during 1908 of $380,085, the reduction being generally distributed among receipts from all countries.

The United States and Great Britain were the principal sources of the supply of manufactures of iron and steel, while Germany, Belgium, and other countries figured in the trade in certain special lines. Importations of miscellaneous machinery, exclusive of sewing machines and sugar machinery, aggregated in value $433,803 during the year, of which $290,598 represented machinery of American manufacture, while importations from the United Kingdom of the same class were valued at $81,163, from Germany $24,168, and from France $19,767. But a small amount of sugar machinery was imported, the total value having been $8,023, of which $7,482 were credited to Great Britain. Germany led in importations of sewing machines, with manufactures valued at $99,185, while those from the United States were invoiced at $31,050, and Great Britain $4,168, the aggregate value of these machines imported during the year having been $134,479.

The heaviest importation of any distinct class of iron was that of sheets and plates, aggregating in value $316,110, of which importations from the United Kingdom were represented by a value of $206,214, and from the United States by a value of $96,411. Of steel plates and sheets aggregating in value $27,948, those from Great Britain were represented by a value of $13,881, and from the United States by $8,478. The greater proportion of the pig iron, and bar iron, valued at $26,486 and $74,453, respectively, came from Great Britain, while of the value of steel rods and bars, aggregating in all $73,417, American steel was invoiced at $31,236 and that from Great Britain at $23,461. British steel rails received were, however, in the lead with a value of $58,183 as against $11,195 from the United States, out of a total importation aggregating $69,827. American wire and cables were invoiced at $29,921, and those from Great Britain at $16,214. Structural iron and steel imported was represented by a value of $54,047, of which $50,067 was the value of that from the United States. In tools, those of American manufacture, valued at $49,388, competed with those

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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from Germany with a value of $36,691, and from the United Kingdom invoiced at $22,830. The values of manufactures of iron and steel referred to above, imported under regular commercial entries, do not include the following figures representing the value of railway construction material entered free of duty under the special privileges extended by Act No. 1566 (see Statement No. 14, Table No. 2):[a]

Bolts, nuts, and washers	$33,734
Sheet iron and steel	15,740
Adding machines and typewriters	462
Miscellaneous machinery	87,243
Rails	413,730
Stationary engines and boilers	69,052
Structural iron and steel	476,652
Tools	35,445
Total	1,132,058

In addition to these free entries may also be mentioned those received for the use of the insular government and American military and naval organizations, of which, no consular invoices having been furnished, the value was not of record. (See Statement No. 15 and supplementary table.)[a] The ascertained values of manufactures of iron and steel imported, including those admitted in the usual manner, $2,164,907, and the duty-free railway imports, $1,132,058, aggregated $3,296,965.

MEATS AND MEAT PRODUCTS.

The greater proportion of importations of canned beef, bacon, and salted and pickled pork during 1908 consisted of American products, although the chief sources of the supply of meats, especially fresh meats, were Australia, China, and other neighboring countries. (See Statements Nos. 8 and 21.)[a] Canned beef amounting to 178,586 pounds, valued at $18,256, of a total importation of 180,106 pounds, aggregating in value $18,601, was received from the United States. Of 88,149 pounds of bacon, valued at $15,800 received during 1908, a total of 44,993 was of American production, 24,567 came from Australia, and from the United Kingdom and Spain 9,195 and 8,511, respectively. Out of a total importation of hams, amounting to 1,036,477, pounds, invoiced at $137,024, Chinese hams, which importers are able to put on the market at a lower price than others, aggregated 727,083, valued at $79,736, as against 135,239 received from Great Britain, 126,847 from Australia, and 30,768 from the United States. The total value of the importations of hams during 1908 shows a decrease from that of 1907 of $15,555. Australia was the principal source of the fresh-meat supply; 6,859,747 pounds of beef, all but a few of which came from that country, were imported, while the same country furnished 342,650 pounds of fresh pork, the remainder, 119,549, having been received from the United States. Lard imports aggregated 1,986,489 pounds, valued at $159,550, of which 1,821,007 were produced in China, 97,720 in the United States, 35,746 were received from Australia, and 27,164 came from the United Kingdom.

DAIRY PRODUCTS.

Australia was the leading source of the butter importations (see Statement No. 21);[a] having furnished 245,433 pounds out of total receipts aggregating 334,779 pounds, while 67,602 were received from Denmark. China and the Netherlands contributed the bulk of the imitation butter received, 79,958 and 35,344 pounds, respectively, having been imported from those countries. Of the supply of cheese, aggregating in all 353,948 pounds, at $41,990 in invoice value, 202,190 were received from the Netherlands, 80,130 from Great Britain, 25,579 from France, and 13,033 and 11,225, respectively, from Switzerland and Germany. The total importations of condensed milk—which amounted during 1907 to 3,646,264 pounds, valued at $289,789—aggregated during the year 1908 in quantity 4,147,423 pounds, and in value $349,307, an increase in value over the previous year's receipts of 25 per cent. The returns show increased

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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receipts from each of the principal sources of supply. Importations aggregating 2,306,210 pounds from the United Kingdom, 1,247,448 of American condensed milk, 466,746 of Swiss manufacture, and 57,379 from Norway constitute the bulk of the total importation, while smaller importations in varying amounts were received from Belgium, Germany, Austria-Hungary, and other countries. As the supply of fresh milk afforded by local dairies is so limited that it is entirely consumed by the hospitals, and but few private families keep their own milch cows, little of the domestic product finds its way to the general public, hence the great demand in the cities and throughout the provinces for the imported substitutes, principally canned milk in especially prepared and condensed form. There is in addition to this, however, a canned fresh milk imported, which has been subjected to no process of condensation or preparation, except such as is required for its preservation. The most of this so-called "fresh milk" is received from Switzerland, importations from that country during 1908 having amounted to 62,409 gallons, valued at $24,923, which, together with 13,913 gallons from Italy, 11,812 from Germany, and 1,623 from the United States, constituted the greater portion of a total importation aggregating 91,669 gallons, valued at $36,627.

VEGETABLES.

The list of countries from which the Philippine market obtains its fresh vegetables is practically limited, so far as large quantities are concerned, to China and Japan. During 1908 China furnished 29,272 bushels of beans and peas, 19,134 bushels of potatoes, and 1,712,672 pounds of miscellaneous garden truck. From Japan 80,752 bushels of onions, 200,207 bushels of potatoes, and 635,987 pounds of other vegetables were received. The value of these foodstuffs during 1908 aggregated $411,200, of which but $31,835 were credited to the United States, $26,736 to Spain, $13,561 to the United Kingdom, while Japan and China furnished values to the extent of $297,927.

EGGS.

The local production of eggs being exceedingly limited, the chief supply is obtained from the China coast. Importations thereof during 1908 aggregated in value $253,665, a decrease of $6,976 from the corresponding value of 1907.

CATTLE.

Figures covering the importation of live cattle for the past ten years indicate a continued annual increase from the total of 193 head received during 1899 to 43,157, valued at $1,055,236, imported during 1908. This number embraces principally beef cattle, but includes occasional small consignments of breeding and draft animals. Chinese cattle continued to lead in this trade, although the 27,895 head received from that source in 1908 is a reduction of 8,179 from the number of Chinese cattle imported during 1907, while animals from the French East Indies to the number of 14,574 represent an increase over those received during the previous year of 13,013. The change in this trade is the result of the recently increased proportion of diseased animals among those from the China coast, and the consequent restrictions placed upon importations from that source, which has led to larger purchases in the French East Indian market.

FLOUR.

Commercial importations of wheat flour during 1908 amounted to 256,066 barrels, which were invoiced at $1,044,570, as against total importations of the same commodity during 1907, represented by a value of $889,174. Practically all of this flour was received either from Australia or the United States, 133,232 barrels having been imported from the former and 122,624 from the latter source. As 96,229 barrels of American flour were imported during 1907, the 122,624 received during 1908 embrace an increase of 26,395, whereas there was a decrease in the commercial receipts from Australia of 7,016. This is an especially favorable showing for American flour when it is considered that flour laden at the nearest port of the United States on the Pacific coast has to its disadvantage a haul of sometimes forty days from its point of shipment, with the increased risk of deterioration and correspondingly higher freight rates, as

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against the haul of twenty-one days, consequent quicker delivery and lower transportation charges by which the Australian flour is benefited. In addition to the above-mentioned commercial importations, 10,985 barrels of flour arrived on United States army transports from the United States, and 9,318 were delivered by commercial vessels for the use of United States government forces, which brings the total importations of flour during 1908 up to 276,369 barrels.

BREADSTUFFS.

In the aggregate invoice value of breadstuffs, exclusive of flour, there was an increase in 1908 over corresponding importations during 1907 of $66,236, the total values having been $263,396 during the former and $329,632 during the latter year. Breadstuffs from the United States contributed 29 per cent of this value during 1908 as against 24 per cent in 1907. The greater proportion of breadstuffs received in the Philippine Islands consists of crackers and biscuits from Great Britain, and Chinese vermicelli and macaroni, while the American trade consists principally of bran, mill feed, and oats. In view of the specialty that is made of crackers and biscuits by American manufacturers and the amount of attention distributers in the United States devote to the purpose of expanding sales in those lines, the scarcity of the American product in the Philippine market is surprising. The demand for this class of goods in the Philippines is supplied largely by those of British manufacture, packed in hermetically sealed tin packages of various weights from 1 pound upward, neatly wrapped and labeled, in such manner as to withstand the effects of a humid tropical climate, and to meet the requirements and taste of the consumer.

DISTILLED SPIRITS.

The value of distilled spirits received during 1908, $240,226, as against $218,967 for 1907, indicates an increase in that trade of $21,259. According to the returns, 34,548 gallons of bourbon and rye whiskey, invoiced at $68,074, were received from the United States, and 1,848 from Canada and the United Kingdom, whereas during 1907 none of this spirit was entered from the last two sources and but 4,441 gallons of the American product were imported. The import figures at the same time show a general decrease in importations of brandy from the several countries of origin, the total receipts in 1908 having a value of $24,542, as against $28,941 for 1907, and also a general decline in other distilled spirits, with the exception of Holland gin, of which importations during 1907 were valued at $22,235, and increased to $28,943 in 1908. The United Kingdom held first place in the whisky trade during 1908, with a total value of $70,630, the American whiskies being second with a value of $68,074, while importations of French brandies continued in the lead in that spirit with receipts aggregating $12,949, followed by Spanish brandies with a value of $7,823.

WINES, SPARKLING LIQUORS, AND CORDIALS.

The 1908 trade in wines, sparkling liquors, and cordials was represented by substantially the same value—$195,211—as that of the previous year, there having been a decline of but $687. The greater proportion of this trade consists of ordinary Spanish table wines, in bulk, and, to a less extent, sparkling liquors and cordials of French origin, in bottles, receipts of the two classes of beverages during 1908 having been invoiced at $131,198 and $44,587, respectively. Importations from the United States were represented by a value of $4,334, or an increase over that of the previous year of $1,650, the net decrease in the total value of receipts during the year having been due to a reduction in importations from other countries.

MALT LIQUORS.

In the malt-liquor trade, imports during 1908, aggregating in value $90,592, show a decrease from those of 1907 of $51,246, or a decrease in quantity of 91,597 gallons. While this decrease was due largely to decreased consumption, it is explained in part by an increase over that of the previous year in the local production. In this connection the following statement of the quantity

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of malt liquors imported, manufactured by local brewers, and consumed during the fiscal years 1901 to 1908, inclusive, is of interest:

Fiscal year.	Imported.		Locally manufactured.		Consumed.
	Gallons.	Per cent.	Gallons.	Per cent.	Gallons.
1901	1,905,290	0.75	614,750	0.24	2,520,040
1902	1,137,226	.59	799,667	.41	1,936,893
1903	736,099	.50	741,050	.50	1,477,149
1904	605,065	.46	698,418	.54	1,313,483
1905	534,237	.45	654,646	.55	1,188,883
1906	360,168	.35	663,716	.65	1,023,884
1907	226,049	.23	740,820	.77	966,869
1908	134,462	.15	744,953	.85	879,415

The importations of malt liquors from the United States during 1908 were valued at $43,756, as against a value of $79,730 for 1907. Practically all of this importation from that country consisted of bottled beer, amounting in all to 67,443 gallons, while 11,724 gallons of bottled beer were received from Germany, 3,885 from the United Kingdom, 2,673 from Denmark, and 2,184 from Japan.

In addition to the bottled beer above stated as received from Germany, that country furnished 18,327 gallons of beer in bulk out of a total importation of 18,439, and the United Kingdom supplied 24,594 gallons of other malt beverages out of a total importation thereof amounting to 26,458 gallons.

ILLUMINATING OIL.

The total quantity of illuminating oil imported during 1908, 9,079,605 gallons, with a value of $806,112, or 2.6 per cent of the total value of imports, shows a decrease from that received in 1907 of 354,020 gallons. The American trade in this oil, however, amounted to 7,658,550 gallons, valued at $619,545, an increase of 379,282 gallons over that of 1907, the decrease in the total importation having been borne by the Dutch East Indian and Russian trade to the extent of 697,516 gallons and 45,500 gallons, respectively, while British East Indian oil shows a slight increase of 10,000 gallons. The marked and constant decrease in Russian oil consumed in the Philippines, from the large amount, aggregating 3,131,864 gallons, received during 1905 to but 500 imported during 1908, and the coincident increase in receipts from other sources, is attributed to a decreased output of Russian oil, while the increase in receipts of American oil during 1908, despite the decrease in the total amount imported during that year, was probably due more to the activity of American distributers than to lack of production of the East Indian oil fields. As an incentive to the use of the American product throughout the islands, importers have, during the past year, distributed to the public at practically cost price, small, inexpensive and specially adapted kerosene-oil lamps, manufactured in the United States, the use of which is gradually replacing the torches and other primitive illuminating appliances heretofore employed.

BOOTS AND SHOES.

The value of boots and shoes imported during 1908 was $451,421, which, compared with that for 1907, shows an increase in favor of the receipts of 1908 of $144,700. The records showing the sources of these importations during the two years indicate a growing demand for those of American make, the value of receipts from the United States during 1907 having been $221,018 and during the following year $338,929, representing a gain of 53 per cent. All except a small proportion of the boots and shoes imported into the Philippine Islands are either of American or Spanish manufacture. Until the year 1905 those made in Spain constituted the larger proportion received, since when the American product, which had been gaining from year to year since 1899, has been in the lead and is steadily replacing all other makes. The following figures

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showing the annual values of receipts of boots and shoes from the United States, Spain, all other countries, and the total value from all sources, strikingly illustrate the gradual deviation of this trade during the past nine years in favor of American-made boots and shoes:

Year.	American made.	Spanish made.	All other makes.	Total imported.
1900	$8,010	$100,523	$40,832	$149,365
1901	10,929	118,843	87,893	217,665
1902	30,103	192,239	77,206	299,548
1903	73,604	382,277	85,489	541,370
1904	85,486	210,431	48,465	344,382
1905	161,018	173,613	21,974	356,605
1906	176,332	140,146	20,075	336,553
1907	221,018	59,000	26,703	306,721
1908	338,929	86,391	26,101	451,421

In the number of boots and shoes represented by the above figures the change is not as marked, for the reason that much of the trade being diverted to the American market is that in the higher class of footwear, and Spanish manufacturers still supply a large number of the cheaper grades, as indicated by the following figures:

Year.	American made.	Spanish made.	All other makes.	Total imported.
1905	101,409	277,705	59,397	438,511
1906	103,879	248,760	39,771	392,410
1907	139,366	132,635	49,542	321,543
1908	208,836	195,593	39,867	444,296

A further influence that has during recent years been producing a marked effect upon the importation of the cheaper class of footwear is the increasing demand, by reason of an apparent realization on the part of all classes of the economy of using more durable makes, for better made and therefore longer-wearing articles.

OTHER LEATHER AND LEATHER MANUFACTURES.

The local manufacture of shoes, although having increased during the past few years, has not been equal to the growing demand and its effect on the number imported has not been apparent. The increased value of sole, upper, and other leather manufactures imported, however, is to a certain extent an index to the growth of the local industry. These receipts during 1908 aggregated $220,541 in value, a gain over the comparative value for 1907 of $48,128.

MANUFACTURES OF VEGETABLE FIBER.

Importations during 1908 of articles manufactured from vegetable fibers, consisting chiefly of textiles, sugar bags, cordage, thread, and crude material for use in local industries, are represented by a value of $614,139, or a gain over the value for 1907 of $58,664. The importations from Spain, valued at $177,057, comprised in most part linen textiles; those from British East India, represented by a value of $114.500, sugar bags; the $117,584 credited to the United Kingdom being made up of hemp rope and linen textile values, while the value of the importations under this class from China, $106,277, covers receipts of raw materials and linen cloths principally, together with importations of sugar bags, cordage, and other manufactures of less importance.

CHEMICALS, DRUGS, AND DYES.

There was a net decrease in the total value of chemicals, drugs, and dyes imported during 1908 from the valuation of that class of merchandise for 1907 of $314,978, the values for the two years having been $568,916 and $883,894,

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respectively, due to the practically complete suppression of the opium trade, almost the entire effect of which was borne by the British East Indian market, although the drug importations from China and other opium-producing countries was reduced to a certain extent. Eliminating opium values from the chemical and drug trade of the two comparative years, there appears to have been an increase in the total value in other lines in 1908 of $54,639. In those lines, the receipts from the United States led, with the principal importations of miscellaneous chemicals and drugs, and patent and proprietary preparations, with a value of $100,724, indicating a gain of $26,886 over corresponding values credited to that source for 1907. Germany was second in the relative value of its entries, aggregating $84,351, English and French manufactures received were $78,081 and $48,759 in value, respectively, while the balance of the value of this class of importations during 1908 was attributed to purchases from various other countries in varying and smaller amounts.

OPIUM.

Opium, of which the British East Indies was, during 1908, as in previous years, the principal source of supply, shows a decrease in the value of 1908 receipts from those of 1907 of $369,617, the total value of importations during 1908 having been but $143,670. This decrease was due to the prohibition of the use of this drug, except for medicinal purposes, by Act No. 1761, of the Philippine Commission, which became effective March 1, 1908. In view of this legislation, the importations practically ceased after November, 1907, since which time the only opium entered through Philippine custom-houses consisted of small consignments of pharmaceutical preparations for medicinal purposes. The following statement shows the quantity of opium imported, its value, and the amount of duty collected thereon, during each fiscal year from 1899 to 1908, inclusive, and will give an idea as to the direct effect of the elimination of this commodity from the islands' trade upon the aggregate value of imports as well as upon the customs revenue:

Fiscal year.	Pounds.	Value.	Duty.
1899	91,823	$255,310	$64,586
1900	155,672	477,027	132,392
1901	221,683	619,338	187,020
1902	285,443	819,625	263,406
1903	259,473	721,551	357,575
1904	249,770	770,596	338,422
1905	268,128	850,381	366,893
1906	150,292	440,464	272,955
1907	169,933	513,287	308,277
1908	50,776	143,670	92,126
Total	1,902,993	5,611,249	2,383,652

COAL.

Of the total quantity of coal imported on commercial entries, amounting to 213,958 tons, valued at $567,220, Australia furnished 208,316, there having been an increase in receipts from that source during the year 1908 of 21,823 tons. Commercial importations of coal aggregating 65,045 tons were used during 1908 on coastwise and foreign vessels, and the import duties collected thereon upon its entry into the Philippine Islands refunded under the provisions of section 224 of the customs administrative act. The principal sources of the commercial supply of coal in the order of relative importance prior to 1906 were Australia, Japan, and Great Britain, but since then British coal has practically disappeared from the local market, and the receipts from Japan have decreased in favor of the Australian product. But little American coal is consumed in the Philippines, except by the United States naval vessels, the amount of which is not included in the above figures. In addition to the 213,958 tons of coal imported during 1908 for commercial use, 272,722, entitled to free entry under special legislation, were received for use of the United States military and naval forces, and for the insular government, and 7,529 for use in connection with railway construction, making the total amount of coal received during the year 494,209 tons.

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PAPER MANUFACTURES.

Importations of manufactures of paper during 1907 were valued at $508,754, and during 1908 aggregated in value $526,434, or 2 per cent of the value of all imports, an increase in the latter year of $17,680, there having been a gain in the American trade of $32,455 and a total decrease in values from other countries of $14,775. The value of American paper and manufactures imported during 1908 represented 32 per cent of the total value of this general group, those from France $97,734 (19 per cent) and Spain $60,478 (11 per cent), the remaining value having been accredited principally to receipts from Austria-Hungary, Great Britain, and China to the extent of 6.4, 5.8, and 4.6 per cent, respectively. The principal classes comprising this general group were printing paper, writing paper, wrapping paper, bags and boxes, and pasteboard. American printing paper as usual led in that class during the year; American-made writing paper values constituted 47 per cent and the value of writing paper from Spain 22 per cent of the total value of that class; the United States and Germany were accredited with approximately 50 per cent of the value of the wrapping paper, bags, and boxes, the remainder representing importations from Austria-Hungary, France, British East Indies, Spain, and other countries in smaller and varying proportions; while France, Austria-Hungary, America, and Spain were the principal countries of origin of other and miscellaneous paper and paper manufactures.

ALL OTHER CLASSES OF IMPORTS.

Other merchandise received, which contributed to the total value of all importations during 1908, as indicated in detail under the various classes in Statement No. 21,[a] consisted of silks, invoiced at $534,611, of which $224,267 were accredited to Chinese goods and $86,350 to those from France; canned and preserved fish, $394,660, of which the United States and France were the principal sources; cement aggregating $331,143 in value, of which $288,868 were assigned to Hongkong; cocoa and coffee from the British East Indies, invoiced at $204,901 and $112,943, respectively; boards and planks, valued at $257,105, or $26,564 less than receipts for the previous year, due to the increased use of native woods; glass and glassware, represented by a value of $190,213; manufactures of wool, valued at $170,968; printed matter, $165,193; brass and manufactures of, $142,645; earthenware, $145,713, and numerous other commodities, represented by less important values, varying widely in nature and origin.

EXPORTS.

DESTINATION.

The value of Philippine products sent abroad during the fiscal year 1908 aggregated $32,829,816, which value, although $891,951 less than that representing exports during the preceding year, exceeded the amount at which Philippine exported products were invoiced during any other of the fiscal years since American occupation, except those of 1903 and 1907, and shows an excess over the annual average for the entire period of $5,174,822. (See Statement No. 6.) According to the following figures, indicating its distribution, the United States stands at the head of the list as the country of the destination of produce aggregating $10,332,116, or 31.5 per cent of the total export value, representing a decrease in shipments to American ports, as compared with those of 1907, of $1,750,248. In exportations to Great Britain declared at $8,870,923, or 27 per cent, there was a gain of $121,709, while France purchased Philippine products aggregating $3,905,878, or 11.9 per cent of the total; the value of exportations to that country, also showing an increase of $1,216,285. The value of consignments to Hongkong and Spain, representing, respectively, 7.4 per cent and 5.2 per cent, and valued at $2,438,438 and $1,719,612, indicate in both instances a falling off in the value of shipments to those points. A decline of $508,067 in the value of exportations to other ports on the China coast is indicated by the 1908 value—$1,527,323, or 4.8 per cent—as compared with that of 1907. Increases are also apparent in the export trade with the British East Indies, Australia, Belgium, and Japan; that with Belgium, upon

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comparison of the export figures for the past four years, showing a notable and marked increase in each succeeding year's business amounting to a gain in the 1908 purchases over those for 1907 of 111 per cent and over that of 1905 of 1,081 per cent. Other increases, in varying amounts, took place in shipments to Austria-Hungary, Dutch East Indies, Korea, Siam, British Africa, and Portugal, while the returns for 1908 show purchases of Philippine products in the Canadian and Canary Island markets, whereas the records of preceding years show no exportations to those two places. There was also a general decline in the value of smaller shipments to other countries.

Country.	Value of exports.	Proportion of total value.
		Per cent.
United States	$10,332,116	31.5
United Kingdom	8,870,923	27.0
France	3,905,878	11.9
Hongkong	2,438,438	7.4
Spain	1,719,612	5.2
China	1,527,323	4.8
British East Indies	911,767	2.7
Germany	602,085	1.8
Australia	528,208	1.6
Belgium	516,336	1.6
Japan	493,800	1.5
All other countries	983,330	3.0
Total	32,829,816	100

The proportional values of principal products (see Statement No. 9)[a] contributing to the total value of the export trade are shown by the following table:

Product.	Value.	Proportion of total value.
		Per cent.
Hemp	$17,311,808	52.7
Sugar, raw	5,664,666	17.2
Copra	5,461,680	16.6
Leaf tobacco	1,592,123	4.8
Cigars	1,084,078	3.3
Cigarettes	38,345	.1
All others	1,677,116	5.3
Total	32,829,816	100

HEMP.

Of the total hemp export value, $7,684,000 covers 48,045 tons laden for American ports, while $7,783,369 represents the value of 53,760 tons shipped to the United Kingdom, 89 per cent of the total amount exported having been consigned to purchasers in the United States and Great Britain. The number of tons exported to the United States and to England during 1908, as compared with the number representing shipments to those countries in 1907, show a decrease in American purchases of 9,424 tons, and an increase in the demand of the other market amounting to 7,099 tons, while slightly increased exportations to Belgium, the Netherlands, British East Indies, and Australia, together with shipments to other countries, represented an exportation during 1908 aggregating in quantity 114,005 tons, which, compared with the 112,895 exported in 1907, shows a net increase of 1,110 tons. This increase, in connection with the decrease in the total value, indicates the serious decline in hemp prices during

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the past year. The hemp export trade for each year during the American occupation, and the amount consigned to American ports is indicated by the following statement:

Exports of hemp.

Fiscal year.	To all countries.		Proportion of value of total exports.	To the United States.	
	Tons.	Value.		Tons.	Value.
			Per cent.		
1899	58,898	$6,185,293	45.1	22,703	$2,436,169
1900	75,496	11,393,883	52.6	25,358	3,446,141
1901	110,448	14,453,110	54.6	17,872	2,402,867
1902	108,237	15,841,316	58.3	44,810	7,261,459
1903	130,159	21,701,575	54.7	70,526	12,314,312
1904	129,742	21,794,960	58.8	60,912	10,631,591
1905	128,564	22,146,241	59.6	72,196	12,954,515
1906	110,399	19,446,769	59.5	61,068	11,168,226
1907	112,895	21,085,061	61.7	57,469	11,326,864
1908	114,005	17,311,808	52.7	48,045	7,684,000

SUGAR.

The exportation of sugar during 1908 amounted in quantity to 149,323 tons, valued at $5,664,666, or 17.2 per cent of the total value of exports, of which 82,956 were shipped to Hongkong and other points on the China coast, 48,697 to the United States, 13,114 to Great Britain, and the remainder to Japan and the British and Dutch East Indies. (See Statement No. 22.[a]) The number of tons and value of sugar exported annually, the proportion of the total export value represented thereby, and the quantity and value consigned to American ports during the past ten years were:

Exports of sugar.

Fiscal year.	To all countries.		Proportion of value of total exports.	To the United States.	
	Tons.	Value.		Tons.	Value.
			Per cent.		
1899	13,246	$520,935	3.8	2,303	$143,500
1900	77,073	3,000,501	12.3	141	21,000
1901	55,691	2,293,058	8.6	2,119	93,472
1902	66,737	2,761,432	10.0	5,143	203,354
1903	109,889	3,955,828	9.9	33,891	1,335,826
1904	73,977	2,668,507	7.2	11,443	354,144
1905	111,850	4,977,026	13.4	56,948	2,618,487
1906	123,813	4,863,865	14.8	7,187	260,104
1907	118,395	3,934,460	11.5	6,506	234,074
1908	149,323	5,664,666	17.2	48,697	2,086,697

COPRA.

Although the proportion of the annual copra crop consumed by local oil factories has rapidly increased during the past three years, the production of the dried copra itself has also developed to such an extent that the quantity exported during 1908, amounting to 168,474,820 pounds, was 60,268,690 more than that of 1907. Buyers in France received 63 per cent, while 14 per cent was shipped to Spain, 6 per cent to Germany, and to the British East Indies and the United States, Belgium, and Italy, approximately 3 per cent each, and 2 per

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cent to the United Kingdom. An increase in the demand for Philippine copra was exhibited by the quantities shipped to the following principal destinations:

Country.	1907.	1908.
	Pounds.	*Pounds.*
France	60,055,841	104,845,547
Spain	18,785,489	24,061,930
British East Indies	3,062,203	6,650,832
United States	2,446,156	6,542,926
Italy	2,788,720	5,383,389

No direct shipments were made to the Belgian market during 1907, but during 1908 consignments thereto amounted to 5,615,309 pounds, while exportations to Germany indicated a decrease of 7,252,699 pounds from the 1907 trade.

In connection with the exportation of dried copra, the following statement of the number of pounds exported during each fiscal year from 1899 to 1908, inclusive, the value thereof and its percentage of the total value of all exports, as well as the quantity and value shipped to the United States, is of interest:

Fiscal year.	To all countries.		Proportion of value of total exports.	To the United States.	
	Pounds.	Value.		Pounds.	Value.
			Per cent.		
1899	30,968,544	$656,870	0.047	.....	.....
1900	81,749,665	1,690,897	.078	.....	.....
1901	115,807,370	2,648,305	.10	227,689	$4,450
1902	43,401,486	1,001,656	.036	104	7
1903	215,234,046	4,472,679	.112	134,629	9,173
1904	119,341,505	2,527,019	.07	383,680	9,231
1905	82,797,227	2,095,352	.056	452,118	14,425
1906	145,851,913	4,043,115	.123	.....	.....
1907	108,206,130	4,053,193	.118	2,446,156	108,086
1908	168,474,820	5,461,680	.166	6,542,926	228,565

Prior to 1906 practically no cocoanut oil appeared among the exports, but since the commencement of its manufacture in 1906 upon a scale large enough to more than supply the local demand the amount shipped to other countries has increased each year, having been 105,942 gallons for 1906, 109,235 for the next year, and 709,239 for 1908. Of that exported during 1908, 430,349 gallons went to the United Kingdom and 255,008 to the United States.

LEAF TOBACCO.

The value of leaf tobacco exported during 1908 was $1,592,123, or 4.8 per cent of the value of all exportations for that year, and represented shipments amounting to 23,264,901 pounds. Of the amount exported 14,327,772 pounds went to Spain, 4,833,867 to Austria-Hungary, 1,611,031 to France, and the remainder, in smaller and varying amounts, to Belgium, China, Hongkong, Uruguay, and numerous other countries. No shipments to the United States were reported.

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The extent to which exportations of leaf tobacco have figured in the total export trade during the past ten years, and the amount sent to the United States are as follows:

Exports of leaf tobacco.

Fiscal year.	To all countries.		Proportion of value of total exports.	To the United States.	
	Pounds.	Value.		Pounds.	Value.
			Per cent.		
1899	13,357,924	$917,536	0.067	.....	.....
1900	18,334,064	989,439	.045	.....	.....
1901	17,936,905	956,451	.036	.....	.....
1902	21,846,086	824,650	.030	.....	.....
1903	20,747,241	913,815	.023	244,377	$42,293
1904	19,142,232	1,031,832	.028	211	35
1905	17,346,424	1,011,612	.031	.....	.....
1906	21,470,345	1,468,839	.044	110,120	7,510
1907	30,133,080	1,973,305	.057	.....	.....
1908	23,264,901	1,592,123	.048	.....	.....

From these figures it will be seen that, although the 1908 shipments do not equal the especially large quantity for 1907, they were, nevertheless, in excess of those for any other year during the period stated.

CIGARS.

Cigars to the number of 117,564,000 were exported during 1908. The total annual exportation of cigars during the fiscal years 1899 to 1908, inclusive, and the number and value thereof sent to the United States have been as follows:

Exports of cigars.

Fiscal year.	To all countries.		Proportion of value of total exports.	To the United States.	
	Thousands.	Value.		Thousands.	Value.
			Per cent.		
1899	167,991	$1,294,653	9.7	1,810	$7,162
1900	219,098	1,189,942	5.4	532	1,885
1901	149,496	1,250,175	4.7	1,335	5,027
1902	225,420	1,666,822	6.0	464	8,539
1903	119,721	947,246	2.4	332	3,866
1904	104,803	968,869	2.6	96	1,795
1905	106,571	968,022	2.9	728	6,790
1906	93,136	904,250	2.6	1,288	23,405
1907	116,719	1,051,621	3.0	1,593	26,067
1908	117,564	1,084,078	3.3	1,365	21,781

Shipments to Hongkong were represented by a value of $326,911, to British East Indies $170,613, and to Australia $162,901. These three were the principal points of destination. Further cigar shipments, varying in value from $87,000 to $50 were made to 40 other countries in different parts of the world.

CIGARETTES.

Of a total exportation of 60,904,000 cigarettes during the year, 22,519,000 were consigned to the Chinese market, 17,627,000 to Korea, and 13,725,000 to Hongkong. The British and French East Indies were the destinations of 2,426,000 and 1,393,000, respectively, while 1,227,000 cigarettes were invoiced to Japanese ports. The remainder of the year's exportations was consigned to numerous other widely distributed points.

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ALL OTHER TOBACCO, INCLUDING PICADURA.

In addition to the above-mentioned exportations of leaf and manufactured tobacco, $10,382 worth of cut and picadura, for use in the manufacture of cigarettes, was sent abroad, chiefly to the Canary Islands, Spain, Gibraltar, and French Africa, small amounts having been invoiced to various other countries.

ALL OTHER EXPORTS.

The remainder of the total export value represents shipments of various manufactured articles and raw materials.

Maguey fiber exported was declared at $194,107, the value accredited to shipments to the United States having been $107,755, to the United Kingdom $46,924, and to Japan $34,650.

Bamboo and bamboo manufactures exported were invoiced at $158,255. Of this amount $83,781 represented locally manufactured bamboo hats sent to France, $23,789 hats to Great Britain, $15,296 to buyers in America, and $12,404 for the Italian market.

Ilang-Ilang oil to the value of $146,050 went to France, $12,198 to the United States, and $6,100 to China, the total value of all exportations of this oil having been $181,638, an increase over the corresponding value of the previous year of $68,554. The British East India market was the principal point of destination for the exportations of mother-of-pearl, shipments thereto having been valued at $85,098 out of a total value of $99,148.

The United States and the British East Indies furnished markets for copal to the value of $35,291 and $28,173, respectively.

Cordage exportations were valued at $33,124, of which consignments to the British East Indies aggregated $26,240. The same market also took the principal part of the almaciga shipped out of the islands, valued in all at $32,156.

Of tropical woods and manufactures thereof, a value of $53,537 represented the total exportation, made up principally of sapan wood shipments to Hongkong aggregating $33,047. These and other minor exportations are shown in detail as to quantities, values, and destinations in Statement No. 22[a] of the Appendix.

FOREIGN CARRYING TRADE.

The year's foreign carrying trade embraces maritime movements at all entry ports, representing the entrance of 1,033 and clearance of 1,010 steam and sailing vessels. Of these, 849 entered with cargo, and 358 cleared in ballast, while 184 entered in ballast, and 652 cleared with cargo. The aggregate tonnage of the vessels represented by these entrances and clearances during the year was 2,976,350 registered tons, an increase of 361,516 over 1907.

NATIONALITY OF CARRIERS—INWARD.

While merchandise imported from Great Britain constituted but 19 per cent of the total value of imports from all sources during 1908, the value representing cargoes brought to the islands in British vessels ($16,252,967) constituted 52 per cent of the total import value for the year. Cargoes invoiced in the aggregate at $5,425,498, or 17 per cent of the total import value, arrived in vessels flying the Spanish flag; vessels of German registry brought merchandise to the value of $3,796,631, or 12 per cent; 3 per cent of the import values consisted of cargoes brought in Japanese vessels, while the cargoes of American vessels contributed but 2 per cent.

Vessels of other nationalities brought cargoes valued as follows: Norwegian, $2,085,292; French, $292,768; while vessels registered in the Philippine Islands delivered merchandise invoiced at $1,155,614, an increase of $492,713 in the value of cargoes carried in domestic vessels over the corresponding value for the year 1907, indicating a continued growth in the extent of Philippine shipping between the islands and other oriental countries. There was a decrease in the values of cargoes carried by American, British, and Spanish vessels, and an increase in those brought in French, German, Swedish, Japanese, and Norwegian bottoms, the gain over 1907 in that accredited to cargoes arriving under the Norwegian flag having been $1,187,467.

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NATIONALITY OF CARRIERS—OUTWARD.

A notable excess in the value of products shipped from the islands in British vessels ($24,667,814, or 76 per cent of the total export value) over the value of products consigned to Great Britain ($8,870,923) indicates the extent to which the export trade with other countries than Great Britain was carried on by means of British shipping. Consignments aggregating in value $2,435,055, or 7 per cent of the total, were laden in vessels of Spanish registry; exports declared in the aggregate at $1,868,392, or 6 per cent, were carried in German vessels; and products valued at $1,576,120, or 5 per cent, were exported in Japanese bottoms while shipments in American vessels were valued at $931,889, in French $906,643, Norwegian $387,314, and in domestic vessels $55,408. According to values there was a decline from the preceding year in the export cargoes carried by British, French, German, Spanish, Norwegian, and domestic vessels, while the values of those exported in American and Japanese vessels showed an increase to the extent of $100,426 and $1,018,094, respectively. (See Statement No. 20.) The following table affords a comparison of the values of cargoes brought to the Philippine Islands in vessels of various nationalities with those of cargoes exported:

Nationality of vessels in which carried.	Value of cargoes—	
	Imported.	Exported.
British	$16,252,967	$24,667,814
Spanish	5,425,498	2,435,055
German	3,796,631	1,868,392
Norwegian	2,085,292	387,314
Domestic	1,155,614	55,408
Japanese	995,984	1,576,120
American	677,181	931,889
French	292,768	906,643
All other	236,810	1,181
Total	30,918,745	32,829,816

By the act of Congress approved April 29, 1908, the act of April 30, 1906, extending the navigation laws of the United States to the Philippine Islands after April 11, 1909, was repealed. Thus the application of the coastwise trade and shipping laws of the United States to the Philippine Islands has been indefinitely postponed, removing the apprehension that trade with the United States will be injured through the high freight rates and inadequate shipping facilities between American and Philippine ports that would no doubt have resulted if that trade had been confined exclusively to American vessels. In connection with this legislation, a comparison of the value of trade between the United States and the Philippine Islands with the value of cargoes now carried in American vessels, as well as a similar comparison of the trade of other countries with the value of cargoes carried in vessels registered in the same countries, is of interest.

The combined value of the import and export trade carried on with all countries during the fiscal year 1908 was $63,748,561. Of this, $15,411,786, or 24 per cent, represented merchandise received from and exported to the United States in commercial vessels, although cargoes brought to and taken away from the Philippine Islands in such vessels of American registry were valued at but $1,609,070, or only 2.5 per cent of the trade value. There was exchanged between Great Britain and the islands merchandise aggregating in value $14,980,509, or 23 per cent, while British vessels carried cargoes to and from the Philippine Islands invoiced at $40,920,781, or fully 64 per cent of the total trade value of the year's commercial transactions. The following tables will show the difference between the actual trade with other countries and the value of cargoes carried in vessels of the same.

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Principal countries with which business was transacted.	Value of import and export trade.	Proportion of total value.
		Per cent.
United States	$15,411,786	24
Great Britain	14,980,509	23
French East Indies	5,758,759	9
China	4,026,492	7
Spain	3,374,092	5
Hongkong	2,902,408	5
Australia	2,574,247	4
Germany	2,535,893	4
British East Indies	2,150,851	3
Japan	1,605,663	3
All other countries	8,427,861	13
Total	63,748,561	100

Nationality of vessels in which merchandise was carried.	Value of cargoes carried by vessels of each nationality.	Proportion of total value carried by vessels of each nationality.
		Per cent.
British	$40,920,781	64
Spanish	7,860,553	12
German	5,665,023	9
Japanese	2,572,104	4
Norwegian	2,472,606	4
American	1,609,070	3
Domestic	1,211,022	2
French	1,199,411	2
All other shipping	237,991	.....
Total	63,748,561	100

PORTS OF ENTRY.

MANILA.

Eighty-nine per cent of the gross receipts of the bureau of customs for the fiscal year 1908 was collected at the Manila custom-house, while 82 per cent of the aggregate value of imports into the islands, and 68 per cent of the value of Philippine products exported, represented the proportion of merchandise entered at, and shipped from, the port of Manila in trade with foreign countries. The general remarks concerning the year's commerce appearing elsewhere in this report are therefore applicable to the transactions effected at that port.

The duties on account of merchandise imported during 1908 aggregated $5,388,717.94, as against $5,425,930.73 for 1907. The net deficit in 1908 of $37,212.79 in the amount of import duties collected was chargeable to the fact that the amount of revenue obtained from importations of opium during 1908 was $158,599 less than the receipts from that source during the preceeding year. The duties on opium shipments entered at Manila during the past four years were as follows:

1905	$294,381
1906	211,256
1907	223,490
1908	64,891

The depressing effect upon customs receipts of prohibiting the importation of this drug was, however, partially counteracted by larger importations and increased revenue from other commodities, for, eliminating the amounts collected on opium importations during the two comparative periods, a gain of 2.3 per cent appears in the other import receipts for 1908.

Export duties, aggregating $877,872.43, were less than the previous year's receipts, which amounted to $915,552.68. The decline in the amount of revenue from this source is due to a falling off in the hemp and tobacco shipments,

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which, allowance having been made for an increase in the amount of duty collected on other exports, produced a net decrease of $37,680.25. In miscellaneous collections from other sources, there was an increase of $37,275.15, the receipts for 1907 and 1908 having been $264,404.25 and $301,679.40, respectively.

The combined revenue of the port from all sources during 1908 aggregated $6,568,269.77, as against $6,605,887.66 for 1907, showing a net decrease from the previous year of $37,617.89.

A material increase in the number of foreign vessels, by means of which transportation between this and foreign ports was afforded, is indicated by 591 entrances and 562 clearances, representing movements aggregating 2,391,762 tons, or a gain in arrivals of 74, in departures of 77, and of 318,057 tons. Arrivals of vessels engaged in the interisland trade numbered 2,360, as against 2,202 for 1907, while departures during 1908 aggregated 2,360, with 2,261 for 1907, showing a gain of 158 in the number of entries and of 99 in the number of vessels cleared, or an increase of 17,791 registered tons.

Despite the increase in the number of coastwise vessels receiving and discharging cargoes, most of which was done at moorings in the Pasig River, below the Bridge of Spain, the berthing space available for those vessels has been gradually encroached upon by reservations for the exclusive use of insular and federal government vessels. Thus the congestion of the lower portion of the river has become not only a serious embarrassment in the administration of existing port regulations but is the source of considerable hardship and loss to vessel owners. Under present conditions, however, the valuable frontage along the south bank of the river extending from the end of the canal nearly to Fort Santiago, and farther up the river, opposite the custom-house, to and including the Magallanes landing, is restricted almost exclusively to Government use, or monopolized by contractors, although, since the completion of the new quartermaster's dock, much of this wharfage is seldom required or used by those for whom it is reserved. On the other hand, with the exception of the anchorage for sailing vessels off Fort Santiago, there are no berths on the south side of the river for interisland vessels, all of which are obliged to find moorings on the north side, with the result that the little space available is constantly overcrowded, frequently three or four vessels being berthed side by side. As much as possible of this reserved frontage should be released and made available for use of commercial vessels, and the filling in of the area between the Intendencia Building and Fort Santiago, which has been so long delayed, completed, to afford more space for discharging cargoes, and thereby relieve the present unsatisfactory and congested condition along the water front. A further improvement desired by local shipping interests, that might well be undertaken, is the widening of the canal connecting the river with the inner harbor, to accommodate the greatly increased traffic between the river and the bay, and to eliminate the existing risk to launches and lighters, which, during the past year, has resulted in numerous more or less serious accidents.

Several important changes for the improvement of the customs buildings and premises at the port of Manila have been made during the year. An extensive rearrangement of accommodations enabled the change of various offices of the custom-house to new locations, the relative positions of which now permit of the coursing of documents and the transaction of business without duplication of work, and with the consumption of the minimum amount of time.

Continual improvements in facilities and methods of handling merchandise by the arrastre plant are producing economies in cost and time required to discharge and deliver freight that far exceed former expectations. This success has been attained by an extensive increase of covered wharf space, the acquisition of an additional, modern, and quick-acting steam crane, and the general concentration of all operations of the plant as near as possible to the water front, where foreign cargoes are discharged from lighters. It is anticipated that the changes already made, and other improvements now nearing completion will enable the adoption of a uniform and reduced arrastre rate in the immediate future that will considerably decrease the cost of delivery and prove of great benefit to commercial interests.

Three public and seven private bonded warehouses are in operation, no changes having been made in the number of the former, while of the latter class eight new ones were established and two discontinued at the request of the owners during the year.

Act No. 1782 of the Philippine Commission authorizes the establishment and operation of manufacturing bonded warehouses wherein foreign materials may be fabricated with Philippine products into articles for export and relieved

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from the payment of duties upon reexportation; but the terms of this act have not as yet been taken advantage of by local manufacturers on account of the expense that would be incurred for buildings in segregating the manufacture of articles intended for export from those for local consumption.

The proposition of establishing a free zone at Manila has received considerable attention, and is now under consideration in connection with the subdivision of the newly made ground on the bay front south of the Pasig River.

The quarters now utilized for the examination of passengers' baggage are inadequate and, furthermore, are urgently required for storage purposes. The present baggage room, located, as it is, in the center of the custom-house building, opens immediately upon a busy portion of the wharf over which most of the arrastre operations are conducted. The consequent risk and inconvenience to passengers is considerable. A new site for a baggage building was therefore secured and a suitable structure has been nearly completed, adjoining the general ticket office, where it has long been customary for passengers to land, and where in any event they must go upon arrival and departure. Thus it will be possible for them to leave the launches, which bring them ashore, pass through the commodious, well-lighted, and convenient baggage room, to carriages or near-by street cars, with the least possible exposure, while their luggage, after inspection, can be loaded on express wagons at the rear exit and promptly delivered at hotels or other destinations in the city.

Extensive dredging operations carried on in the harbor and the removal of wrecks during the year have so increased the extent of deep-water anchorage behind the breakwater as to afford considerably more berthing room for large vessels, thus removing to a great extent the cause for complaint heretofore existing of limited accommodations for steamers of deep draft. Ample anchorage space, in a minimum depth of 29½ feet, is now available to meet the requirements of the largest vessels. Other harbor improvements are progressing, including the construction of commercial piers, two of which are nearing completion, and a further extension of the deep-water area to within 400 feet of the western breakwater is projected, which will, when the work is completed, afford facilities to shipping that will compare favorably with those of any other port in the Orient.

CEBU.

An increased activity in the commercial transactions carried on through the port of Cebu is indicated by an aggregate value of merchandise received of $2,399,766 and of products shipped to other countries of $5,606,407, representing a gain over the preceding year in import and export values of $18,005 and $113,273, respectively.

Customs revenues collected, amounting to $869,814.04, exceed the record receipts for 1903 by $40,327.95, having been the largest for any twelve months during the past ten years, viz:

1899	$130,442.42	1904	$634,817.03
1900	316,079.77	1905	782,787.59
1901	498,860.93	1906	644,212.45
1902	550,676.42	1907	802,591.46
1903	829,486.09	1908	869,814.04

A comparison of the amounts accruing on account of import and export duties and all other collections, as well as the total receipts for the last three years is afforded by the following statement, showing a gain from all three sources, but especially from duties imposed on exported products:

Year.	Imports.	Exports.	All other.	Total.
1906	$434,017.88	$170,089.30	$40,105.27	$644,212.45
1907	577,653.86	186,641.48	38,296.13	802,591.47
1908	587,062.72	233,246.95	49,504.37	869,814.04

Expenditures on account of the customs service at the port of Cebu during the year amounted to $26,508.49, or 16 per cent more than the expenses of the previous year.

The net increase in the import trade during the year was due, with but few exceptions, to a general improvement in the receipts of merchandise of all

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classes. The value of cotton goods entered was $402,464, as against $303,866 for 1907; the value of importations of flour was $99,040, or a gain of $35,768 over that of the preceding year's receipts. The increase in rice importations was not as great as at some of the other ports, the total receipts thereof having been invoiced at $1,355,699, or a gain over the 1907 value of but $162,443.

The favorable influence of the trade in these and other classes of merchandise upon the aggregate value was, however, offset to a certain extent by slightly decreased importations of manufactures of iron and steel, the total value of which was $61,366, as against $62,375 for the previous year; a falling off of $48,436 in the value of illuminating oil, which was invoiced at $74,954, as against the 1907 value of $123,390; and through the termination of the opium trade, a decrease in the value of receipts of that drug from $74,482, representing 1907 importations, to a value of but $23,649 for 1908.

The value of hemp fiber and dried copra represented 99 per cent of the total value of the products marketed through the port of Cebu during the year. Hemp shipments were invoiced at $3,890,308, and copra consignments at $1,588,777.

The quantity of hemp fiber exported during the year, aggregating 27,788 tons, exceeded the amount shipped during 1907 to the extent of 4,267 tons, and surpassed the highest previous record, that of 1905, by 394 tons. Thus, the effect of the serious decline in hemp prices was partially counteracted by the increased exportation.

The following statement shows the number of tons and value of hemp exported from Cebu during the years 1899 to 1908, inclusive:

Fiscal year.	Tons.	Value.	Fiscal year.	Tons.	Value
1899	5,333	$503,828	1905	27,394	$4,696,992
1900	14,844	1,881,714	1906	22,254	3,794,034
1901	20,783	2,525,857	1907	23,521	4,464,171
1902	17,547	3,439,143	1908	27,788	3,890,308
1903	22,323	4,186,519			
1904	16,545	2,848,299	Total	198,332	32,230,865

While in value ($1,588,777) the exportation of copra exceeded that of any other year, the quantity (45,686,508 pounds) did not equal that shipped during 1903, although it represented a gain of 84 per cent over the amount exported during 1907. The quantities of copra annually exported from Cebu during the past ten years, and the aggregate value thereof, stated in the following table, show the remarkable increase during 1908, due to which the total value of all exports indicated a gain despite the serious slump in the price of hemp:

Fiscal year.	Pounds.	Value.	Fiscal year.	Pounds.	Value.
1899	1,113,200	$24,050	1905	13,971,603	$443,609
1900	5,211,146	107,220	1906	23,814,363	707,844
1901	10,130,107	222,936	1907	24,870,588	955,614
1902	4,610,190	138,931	1908	45,686,508	1,588,777
1903	59,104,273	1,025,264			
1904	7,810,710	222,984	Total	196,322,688	5,438,229

During the year 89 foreign vessels entered and 64 cleared, representing tonnage movements into and out of the port aggregating 256,132 tons, or an increase of 9 entries and 7 clearances over those of the previous year. Coastwise entrances and clearances amounted in number to 2,098 and 2,117, respectively, or an increase of 204 in the number of vessels entered from, and of 221 in vessels dispatched for, other Philippine ports. The new sea wall has proved of great benefit to vessels, as it enables them to discharge cargoes from the hold direct to the shore, thereby avoiding the expense and other disadvantages involved in lightering freight from the vessel to the wharf.

The commercial improvement during the past year, as indicated by a gain in the amount of customs receipts; an increase in the production of hemp and copra; a general gain in the value of both imports and exports; and a larger number of foreign and coastwise vessels calling at the port, is a reflection of conditions, not only at Cebu, but also in the several adjacent provinces and islands which receive from and send to Cebu, as the commercial gateway of the district, their supplies and produce.

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ILOILO.

A noteworthy feature in connection with the customs transactions at the port of Iloilo during 1908 was the increase in collections on account of import and export duties, and in all other receipts, over those of 1906 and 1907, as follows:

Year.	Import duties.	Export duties.	All other.	Total.
1906	$453,057.94	$47,639.96	$84,631.92	$585,329.82
1907	458,973.60	48,890.06	88,152.20	596,015.86
1908	546,418.25	54,000.81	94,483.98	694,903.04

Thus the total receipts, amounting to $694,903.04, representing a gain of $98,887.18 over 1907 collections, exceeded those of any previous year during American régime, except 1901 and 1903. The increased customs transactions, indicated by the larger receipts, involved but slight additional expense in the cost of collection, the expenditures during the year having been $26,725.87, as against $25,115.73 for 1907.

Coincident with the upward trend of the receipts was a gain of $428,490 in the value of foreign merchandise imported directly, and of $882,421 in that of direct shipments to foreign countries, the total value of importations during the year having been $2,317,603, and of exportations $4,159,636. These values do not, of course, cover merchandise imported at Manila and thereafter sold for consumption in the Iloilo district, nor exports sent coastwise to Manila for shipment there in outward-bound vessels, which were credited to transactions of the latter port. The principal article of import was rice, valued at $891,625; and a comparison of this with the corresponding value for 1907 ($364,015) shows an increase of 145 per cent, which is attributed to the stimulation of the usual demand for foreign rice by a partial failure of the local crops, as well as by the desire of dealers to obtain stocks prior to the advance in the rate of import duty thereon. This increased importation of rice accounts, in a large measure, for the increase both in import collections and in value. The value of cotton goods received was $631,649, or $29,339 less than the 1907 value. There was a gain of $14,745 in the value of manufactures of iron and steel imports, which aggregated $108,506, the value of flour importations ($93,367) indicates an increase of $36,443; while there was also a gain of $27,040 represented by the value of illuminating oil, aggregating $86,244. The value of opium importations was but $12,150, as against a value of $40,513 for 1907, this decrease showing the effects of the prohibitory legislation heretofore mentioned.

Seventy-two per cent of the sugar shipped from the islands during 1908 was exported from Iloilo. Of the total value of all exports from that port, aggregating $4,159,636, sugar shipments were declared at $4,113,801, and to its increased exportation was principally due the renewed business activity during the last half of the year. Although the 1908 sugar crop amounted to but 1,270,000 piculs, as against a crop of 1,607,225 piculs for 1907, part of the 1907 output had been held on account of the low prices then prevailing. A deficit in the Cuban crop created an increased demand in the American market, and as a result of this stimulus there occurred during the latter part of the year a rise in the local price of from $1.725 to $2.75 per picul. This was taken advantage of by dealers in the exportation of the balance of the 1907 production as well as the 1908 crop. Therefore, despite the decrease in the 1908 crop, there resulted an increase in the amount exported during that year as against the quantity shipped during 1907. The advance in price was sufficient, for the time being, to cause a few speculative shipments to American ports instead of to the Chinese market, but the deflection was temporary, for as soon as the Chinese buyers realized the necessity of paying the increased price the normal movement to the China coast was resumed.

Another potent factor in the general prosperity of the district was the railway construction work being carried on from Iloilo in the direction of the north coast. This enterprise afforded employment for many of the people and was therefore instrumental in placing considerable money into general circulation. While a beneficial effect from this work is apparent in the immediate improvement of the financial condition of the district, it has, furthermore, already resulted in an increase of the area of land under cultivation, and the advantages that will ultimately accrue from the opening up to cultivation of extensive fertile sections of Panay, heretofore unused from lack of transportation facilities,

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placing them in communication with the market, can not easily be overestimated.

Iloilo has been the regular port of call of steamers from Hongkong, as well as the monthly North German Lloyd vessels from Singapore. The recent change in the schedule of the Spanish mail steamships, to include that port, has placed it in direct communication with Liverpool, Barcelona, and intermediate ports, thus substantially increasing its shipping advantages.

The promptness with which the steamship lines avail themselves of good harbor facilities for working cargo increases the desire of all concerned for the early completion of the inner harbor work projected. The principal business of the port is the shipment of sugar, and economy in loading is therefore an important factor. The great saving in the cost of lading cargoes at the wharf instead of on vessels anchored at a distance, and in the decrease of losses incident to repeated handling, would accrue to the producer, reduce the cost of marketing, and be of great benefit to the principal industry of the district. The corresponding economy in discharging imports would result in decreased cost to the consumer. Thus, the far-reaching benefits that will be derived from such facilities urge the speedy completion of harbor work already begun at Iloilo, and will far more than compensate for the cost of the work.

Business conditions at the end of the fiscal year, by reason of the success with which local crops were marketed and the generally increased activity noted, hold brighter prospects than for some time past, and the prevalent feeling in commercial and industrial circles is one of confidence.

ZAMBOANGA.

The total collections at the port of Zamboanga for the year 1908 amounted to $101,059.07, an increase over those of 1907 of $612.79. Import duties received were $1,659.58 less, while there was a gain of $1,158.87 in export duties and of $1,113.50 in other receipts. Although there was a general increase in the aggregate value ($394,483) at which imports were invoiced, a large reduction in opium receipts, as indicated by a comparison of the amount of duty imposed on importations of that drug during the year, aggregating but $1,948, with the sum of $9,002 accruing from this source in 1907, resulted in a net decrease in the amount of import duties collected.

Customs expenditures during the year amounted to $9,121.01, while the cost of the service during 1907 was $9,446.99.

In the value of receipts of cotton goods ($129,792), manufactures of iron and steel ($38,048), meats and dairy products ($21,398), flour ($18,218), rice ($73,798), and other staples, there was a material increase.

A gain of $49,820 in the value of exports, aggregating $255,806, took place, due to an increased exportation of nearly all of the principal products of the district. The copra crop yielded 4,558,858 pounds, valued at $138,353 for export, as against shipments during 1907 amounting to 2,495,185 pounds. In hemp exportations an increase from 9 to 37 tons was shown, while copal and gutta-percha shipments aggregated 683,482 pounds and 55,551 pounds, respectively. The value of mother-of-pearl exported amounted to $33,366, as against $14,115 for 1907. Other products upon which the export trade of the port was, to a more or less extent, dependent were common seashells, valued at $13,295; tortoise shell, $9,299; beeswax, $5,697; and pearls, valued at $2,650.

Forty-two foreign and 194 coastwise vessels called at the port during the fiscal year, and while a comparison with the number entering during 1907 shows a decrease of foreign shipping, an increase of 73 in the number of coastwise vessels indicates a gratifying development of the interisland trade.

Although the producers have been somewhat handicapped by the low prices prevailing during the year, the increased output of the staple products of the district has enabled local business interests in general to not only hold their own but to make a material advance over the record of 1907.

JOLO.

The combined import and export trade at the port of Jolo during the year was represented by a value of $516,609, a gain over that of the previous year ($458,298) of $58,311, due to an increase of $17,496 in the import value and $40,815 in that of exported merchandise.

Of the total value of commodities imported ($292,073), 59 per cent, or $174,335, represented cotton goods, and $48,337 importations of rice; $6,532 manufactures of iron and steel; $4,041 opium; $2,737 breadstuffs; and $1,997

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meats and dairy products, the remainder of the total value having covered general merchandise of numerous classes.

The export value aggregated $224,536, of which $58,550 was declared on copra shipments, $52,219 on mother-of-pearl, and $26,970 on hemp fiber. The exportation of copra shows an increase of 1,589,567 pounds over that of 1907, while mother-of-pearl shipments were 9,456 pounds more in quantity, but owing to a decline in prices were invoiced at a lower figure than that of the previous years.

The customs revenue for the year amounted to $77,589.04, a net decrease of $4,439.26 from the total of receipts for 1907. There was a gain of $1,036.86 in export duties and of $424.48 in miscellaneous collections, the net decrease in the total collections having resulted from a decline of $5,900.60 in import duties, attributed to the discontinuance of importations of opium. Receipts from that source during 1907 amounted to $9,486 and in 1908 to but $2,794, or a loss of $6,692. The quantity, value, and duty of this drug imported at Jolo during the past three years are as follows:

Year.	Pounds.	Value.	Duty.
1906	2,572	$6,601	$4,496
1907	5,233	14,958	9,486
1908	1,540	4,041	2,794

There were 31 entrances of foreign vessels during the year, as against 20 entries in 1907, while 149 coastwise vessels called, an increase of 71 over the number entering in 1907.

The removal of obstructions from the water in front of the customs wharf increases the depth several feet and enables large vessels to discharge at the dock, while improvements to the arrastre plant greatly add to the facilities for the handling of cargo.

Agriculture in the district is reported to be more flourishing than at any other time during the past ten years, the area of land under cultivation having been doubled since 1905. Cocoanuts, hemp, tapioca, corn, and peanuts figure among the principal agricultural products, while other local industries yield sponges, mother-of-pearl, and tortoise shell in substantial quantities.

BALABAC.

Heavy rains prevailing during the last half of the year interfered with crops, upon which the welfare of the district is dependent, to such an extent as to materially reduce the amount of products exported, the total value of which was $10,052, as against $11,865 for 1907. The consequent reduction of purchases was indicated by a decrease in the value representing merchandise imported from $14,171 for 1907 to $10,055 for 1908.

Associated with the decrease in the import and export trade was a falling off in the customs revenue collected. The total receipts for the year aggregated but $3,477.29, as against $4,718.67 for 1907, the loss having been due principally to a decrease of $1,245.23 in the amount of import duties. Expenditures on account of customs service during the year amounted to $2,816.96.

Of the total value of imports 63 per cent represented receipts of cotton goods and the remainder covered general merchandise of various kinds. The principal products exported from Balabac were 238,317 pounds of gum almaciga, 10,517 of rattan, 3,779 of beeswax, 7,242 of dried fish, and a quantity of seashells.

There were 48 entrances of foreign vessels, an increase of 18 over the number during 1907, while in the coastwise trade but 3 vessels of more than 15 tons burden called, the local trade being carried on in small vessels not required to formally enter and clear. The customs supervision of the adjacent coast has been greatly facilitated by the installation of a telephone line between the custom-house and Cape Melville, at the extreme southern end of the island, from which notice of vessels entering Philippine waters from Borneo or going up the west coast of the island can be immediately transmitted.

An increased activity and general improvement in agricultural conditions, despite the recent setback to the year's crops, is reported in progress, while the operations of a number of persons engaged in timber cutting have afforded labor for many formerly unemployed and cleared considerable land for cultivation.

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JURATA AND SITANKI.

The receipts from customs transactions at Jurata during the year amounted to $1,329.39, the service there having been maintained at an expense of $1,908.15. Merchandise imported was valued at $3,689, while $2,149 was declared on products shipped to foreign countries. The year's collections at Sitanki were in all but $1,523.56, while expenditures amounted to $1,903.76. The total invoice value of imports was $4,049 and of exports $7,896.

The ports of Jurata and Sitanki were opened to foreign commerce July 3, 1905, and February 15, 1906, respectively. During the period they were maintained as subports of entry the expense incident to the customs service thereat was considerably in excess of receipts. The principal object in establishing these entry ports was to decrease the illicit traffic with adjacent islands, by affording the inhabitants of these remote places an opportunity to import merchandise through legitimate channels in small vessels from Borneo, rather than to require them to make their purchases through distant Philippine entry ports with which they, at that time, had little or no communication. These two ports are now, however, included in the itineraries of interisland steamships, so that merchandise may be obtained with equal or greater facility from other home ports than from Borneo. Moreover, Act No. 1844, restricting foreign commerce to vessels of over 30 tons burden, now renders the traffic with Borneo in small vessels unlawful.

Jurata and Sitanki were, therefore, by executive order of the governor-general No. 39, ordered closed from and after June 30, 1908.

The following statement of receipts and expenditures at the ports of Jurata and Sitanki, from the date they were opened to June 30, 1908, shows the relation of the annual receipts to the cost of maintaining the customs service thereat:

Year.	Jurata.		Sitanki.	
	Receipts.	Expenditures.	Receipts.	Expenditures.
1906	$1,244.00	$1,571.39	$106.66	$283.90
1907	1,434.87	2,344.10	1,239.64	1,933.53
1908	1,329.39	1,908.15	1,523.56	1,903.76

BONGAO.

The port of Bongao, at which practically the same conditions existed as at Jurata and Sitanki, was closed by executive order of the governor-general No. 50, dated November 8, 1907. The customs receipts from the first of the fiscal year up to and including the time business was suspended were but $55.19, and expenditures amounted to $379.31, while imported merchandise to the value of $102 was entered, and exports declared at $56 were shipped to foreign ports. The annual receipts and expenditures at the port of Bongao have been as follows:

Year.	Receipts.	Expenditures.
1904	$1,223.00	$1,533.87
1905	1,552.54	4,732.73
1906	1,456.81	3,663.13
1907	346.77	2,078.52
1908	55.19	379.31

DAVAO.

By Act No. 1823, passed May 15, 1908, the Philippine Commission provided for the opening of Davao to foreign commerce July 1, 1908. This was done for the reason that Davao, located as it is at the head of the gulf of that name in southern Mindanao, is the natural gateway to the rapidly developing agricultural district of which it is the capital and principal town. It also furnishes

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a customs base in that part of the archipelago remote from any other entry port, and provides means for direct communication and legitimate commerce with the Celebes Islands but a short distance to the south. While it is not expected that the volume of business at this port will be large at first, the prospects, based upon the known agricultural resources and possibilities of the surrounding country, indicate that it will steadily increase and eventually attain considerable importance.

The trade returns from the several municipalities in the district, covering the fiscal year 1908, show that merchandise valued at $408,140.27 was received for consumption, and that produce was shipped to the value of $460,520.94, resulting in a balance in favor of the district of $52,380.67. Some of the principal products shipped from the district during the fiscal year 1908 were as follows:

	Tons.
Hemp fiber	1,727
Almaciga	501
Biao	192
Copra	36
Beeswax	3

During the fiscal year just closed new capital to the extent of $181,887.24 has been invested in commercial and agricultural enterprises, and it is anticipated that the establishment of direct intercourse with foreign markets, by opening the port, will act as a further stimulus to the already advanced development of the district.

GENERAL COASTWISE TRADE.

During 1908, 8,572 entrances and 8,568 clearances of vessels licensed to engage in the coastwise trade between ports of the Philippine Islands were effected, an increase of 609 entrances and 522 clearances over the corresponding numbers of the previous year, indicating an increased activity in the interisland commerce. These entrances and clearances represent a total tonnage movement of 1,952,909 tons, against 1,794,104 during 1907, showing an increase of 158,805.

On June 30, 1908, there were 164 steam vessels, 386 sailing vessels, and 53 lighters and other craft of over 15 tons burden operating in the general coastwise trade, representing an aggregate of 49,618 registered tons, as shown below:

Port of registry.	Steam.		Sail.		Lighters, etc.		Total.	
	Number.	Registered tonnage.	Number.	Registered tonnage.	Number.	Registered tonnage.	Number.	Registered tonnage.
Manila	121	22,935.32	175	10,094.27	50	5,235.56	346	38,265.15
Iloilo	16	525.48	126	5,324.52	1	60.83	143	5,910.83
Cebu	23	1,390.81	80	3,390.74	2	54.56	105	4,836.11
Zamboanga	3	242.68	4	321.10			7	563.78
Jolo	1	26.58					1	26.58
Balabac			1	15.65			1	15.65
Total	164	25,120.87	386	19,146.28	53	5,350.95	603	49,618.10

HARBOR VESSELS.

In addition to the above vessels licensed to engage in the interisland trade, there is a number of craft to which documents have been issued permitting them to ply in the districts of Manila, Iloilo, and Cebu, their operations being confined, under the provisions of Act No. 1136 of the Philippine Commission, as amplified by Act No. 1387, to the limits of the respective ports at which their licenses were issued. Of these craft, there are at the port of Manila 84 steam vessels, with an aggregate tonnage of 1,612.62 registered tons, and 423 lighters and cascoes, representing 22,497.78 registered tons. At the port of Iloilo 3 of these craft, and at Cebu 31, with tonnage aggregating 60.89 and 956.69, respectively, are documented and authorized to engage in the local harbor and

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lighterage work. The following statement shows the number and tonnage of all vessels operating in the islands under licenses of this class, June 30, 1908:

Port.	Steam.		Lighters and cascoes.		Total.	
	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.
Manila	84	1,612.62	423	22,497.78	507	24,110.40
Cebu	.....	.....	31	956.69	31	956.69
Iloilo	.....	.....	3	60.89	3	60.89
Total	84	1,612.62	457	23,515.36	541	25,127.98

DOCUMENTATION OF VESSELS.

While the greater number of movements, referred to above, indicates an increasing volume in the coastwise and interisland trade, and more demands upon the service of the vessels engaged therein, the records show that the actual number of coastwise craft in commission has decreased from 1,283 vessels available in 1905 to 851 in 1908. (See Statement No. 29 of Exhibit D.) It is evident from this that many of those wrecked (see Statement No. 27)[a] or sold to foreign purchasers are not replaced, although Philippine registry may be secured for vessels constructed abroad, provided they are owned by citizens of these islands or of the United States.

During the last eight years certificates entitling them to the protection of the United States and to fly the American flag have been issued at the several entry ports of the Philippine Islands to 5,693 vessels, as follows:

Port.	Number of vessels.	Port.	Number of vessels.
Manila	2,413	Balabac	8
Cebu	2,046	Aparri	12
Iloilo	972	Jurata	1
Zamboanga	106		
Jolo	66	Total	5,693
Bongao	19		

The number of certificates of protection issued during 1908 was 99, as shown in Statement No. 26,[a] Exhibit D, of the Appendix. Signal letters were assigned to 8 and official numbers were designated for 49 vessels during the year. (See Statement No. 25.)[a]

Since January 1, 1900, to and including June 30, 1908, there have been issued at the port of Manila 3,059 first-class and 2,541 second-class licenses entitling vessels to engage in the coastwise trade. (See Statement No. 29.) The following table shows the number and class of licenses issued to vessels at that port during the fiscal year, the tonnage represented, and fees collected:

Class of vessels.	Number issued.	Net tonnage.	Fee per ton.	Amount collected.
First-class steam	112	22,679.96	$0.75	$17,010.14
First-class sail	225	15,329.83	.50	7,664.92
Lighterage and harbor	514	24,299.74	.50	12,149.87
Total	851	62,309.53	.....	36,824.93
For transfer of licenses from one class to another class				63.85
Total receipts, 1908, on account of licenses				36,888.78

The number of licenses recently issued, and the receipts accruing from fees for these documents, as compared with those of previous years, are considerably less, owing to the abrogation, by Act No. 1354, of the provisions of section 141 of the customs administrative act, which required owners of vessels of less

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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than 15 tons burden to obtain licenses to engage in the coastwise trade, and to the reduction in the rates per ton for license fees for vessels of all classes, by Act No. 1387.

In addition to the documents mentioned above, 392 certificates of various kinds pertaining to coastwise shipping were issued, for which fees aggregating $1,052.60 were received, while miscellaneous collections on account of fines, sale of roll books, etc., amounted to $179.50, the total receipts in connection with the work of the license division during the year having been $38,120.88.

MORTGAGES AND CONVEYANCES.

There were also recorded, during the year, 142 instruments pertaining to conveyances of, and mortgages and liens on, various craft.

The opinion of the attorney-general, referred to in the report of this bureau for the fiscal year 1907, to the effect that mortgages on vessels must be recorded both by the collector of customs and the register of deeds in Manila, is still followed, and the recommendation heretofore submitted, that this double system of registering such documents, so fraught with danger to innocent purchasers, be done away with, is renewed.

HULL AND BOILER INSPECTION.

Of the total number of vessels inspected in the Philippine Islands during the fiscal year 1908, 34 were steam vessels of over 500 tons gross, the largest registering 1,875 tons, 13 were over 300 and under 500, 59 over 100 and under 300, and 182 under 100 tons gross; of the sail vessels, 2 only were over 300 tons, 20 over 100 and under 300, and 46 under 100 tons gross. The total number of steam vessels inspected was 289, and of sailing vessels 68. Of this total number inspected only 211 were certified.

Formerly at least 50 per cent of all repairs to steam vessels over 300 tons were made in dry dock at Hongkong or other China coast ports, but this year very few vessels have been sent abroad for that purpose.

New boilers have been ordered in several steamers this year, and such steamers are now operating on special certificates, pending the arrival of their boilers.

The detail work of this service consists of making thorough inspections of hulls, boilers, machinery, and equipment of steam vessels, and the hulls, sails, rigging, and equipment of all sailing vessels of the above-mentioned tonnage, at least once each year, upon application in writing by the masters, owners, or agents of the vessels, and proper instructions are given as to the repair of the same. When instructions are issued for the repair of vessels, ample time is given in which to complete such repairs, when the same can be done with safety. There is a general tendency on the part of owners, however, to delay these repairs as much as possible, even in the face of danger to both life and property.

All iron and steel vessels are placed on dry dock at least once each year; wooden vessels are docked at least once in two years. The inspection of vessels in dry dock consists of a thorough examination of all plating, seams and rivets of the bottom, up to the load water line, overhauling of sea cocks, rudders, and tail shafts. The bulkheads, framing, angles, water-ballast tanks (if any) are all examined inside for defects, and all pumps and piping to bilges are overhauled. In fact, the entire structure of the vessel is examined, to discover any defects that may exist which would render the vessel unseaworthy. Wooden vessels are stripped of coppers, if found necessary for the examination of all planking, and to disclose any defects in keel, seams and butts, and fastenings of the hull.

The greatest number of inspections by far were, of course, made at the port of Manila, but many were conducted as well at Cebu and Iloilo, while inspectors also visited and made inspections, by appointment, at Zamboanga, Davao, Sorsogon, Legaspi, and Gubat. Complete data are taken concerning all inspections made and retained as a part of the permanent records of the bureau.

The great difficulty of keeping small launches up to a reasonable standpoint of efficiency still prevails, especially in the matter of equipment. It frequently happens that when launches are given final inspection, the equipment demanded by inspectors is found on board, but as soon as the certificate is issued, boats and equipment are transferred to other vessels, or left on shore for safekeeping. Strict observance of passenger-carrying requirements is the exception and not the rule with small vessels plying in and about Manila, although every effort is made, with the force available, to correct this state of affairs, and it is presumed that the same condition prevails at other ports of the archipelago, whether supervision is lax or severe. Criticism of officers charged

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with the enforcement of shipping regulations is often made by those who know little or nothing of the conditions and difficulties which beset those who attempt to control a traffic which, until recent years, was allowed to flourish unmolested. But little credit is given to officials who have striven faithfully for years to compel operators of launches to observe the safety provisions of regulations—with poor success, however, and indifferent cooperation. This work is rendered even more discouraging by the laws which permit launches to navigate without licensed officers. Act No. 1066 permits the operation of steam vessels under 100 tons and sailing vessels under 150 tons without licensed deck officers, making it impossible for the marine authorities to control launch patrons through their licenses. It might be supposed that owners of vessels would take sufficient interest in their safety to employ officers of demonstrated ability, but this, unfortunately, is not the rule, as shown by the results of the investigation of nearly every marine accident since 1903. The recent loss of the steam launch *San Gabriel* in Manila Bay and the consequent loss of life, due to the overloading of the vessel, demonstrates the necessity for legislation on this subject, for the proper protection of life and property, and, generally, to regulate the transportation of passengers and merchandise in the waters of the Philippine Islands. A draft of an act upon this general subject is now under consideration, and it is hoped that the main objections on the part of those affected can be removed, without impairing the efficiency sought, in time for its presentation during the next session of the Legislature.

The details of all operations of hull and boiler inspectors during the last fiscal year, including the names and tonnage of all vessels to which certifications of inspection were issued, the same information with respect to vessels to which certificates were denied, for cause, vessels in commission awaiting repairs, and vessels condemned, lost, and wrecked, are contained in Statements Nos. 30 to 36 [a] of Exhibit E.

BOARD ON PHILIPPINE MARINE EXAMINATIONS.

The Board on Philippine Marine Examinations, organized in pursuance of Act No. 1602 of the Philippine Commission, is composed of the insular collector, president ex officio; the supervising inspector of hulls and boilers, acting chairman; Mr. Charles Webb, marine engineer, and Mr. Vicente Verzosa, master.

During the fiscal year 1908, the board examined 175 applicants for licenses of all classes, as against 208 during the preceding year—a falling off of 33. Of the applicants, 110 passed and 65 failed to obtain the necessary average to secure licenses.

The following tabulated statements show the details of the examinations conducted, the number of licenses and certificates of service issued during the past year, the number of officers of all classes available for service at the end of the year, and the number of those recorded whose licenses have expired:

Licenses and certificates of service issued by the Board on Philippine Marine Examinations during the fiscal year ending June 30, 1908.

Class.	Licenses issued to citizens of the—					Certificates of service issued to subjects of—					
	Philippine Islands.		United States.								
	Original.	Renewed.	Original.	Renewed.	Total.	Spain.	Great Britain.	Denmark.	Germany.	China.	Total.
Masters	3	46	2	19	70	31	4	1	.....	.....	36
Chief mates	7	14	1	10	32	9	.....	.....	1	.....	10
Second mates	10	9	1	3	23	.....	.....	.....	.....	.....	.....
Third mates	9	26	1	.....	36	.....	.....	.....	.....	.....	.....
Patrones	2	125	3	8	138	3	.....	.....	.....	.....	3
Chief engineers	3	110	2	5	120	14	1	.....	.....	.....	15
First assistant engineers	5	77	.....	5	87	3	.....	.....	.....	1	4
Second assistant engineers	5	123	1	.....	129	2	.....	.....	.....	1	3
Bay and river engineers	38	113	.....	.....	151	.....	.....	.....	.....	1	1
Total	82	643	11	50	786	62	5	1	1	3	72

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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Marine officers available and unavailable for service, June 30, 1908.

Class.	Available, with unexpired licenses and certificates.				Unavailable, with expired licenses and certificates.			
	Americans.	Filipinos.	Foreigners.	Total.	Americans.	Filipinos.	Foreigners.	Total.
Masters	17	48	35	100	50	17	44	111
Chief mates	5	19	7	31	14	5	8	27
Second mates	3	14	.....	17	11	7	3	21
Third mates	1	30	.....	31	4	9	.....	13
Patrones:								
250 steam and 700 tons sail	1	14	.....	15	4	2	.....	6
200 steam and 700 tons sail	.....	1	.....	1	.....	1	.....	1
200 steam and sail	5	91	3	99	5	101	3	109
200 tons sail	.....	3	.....	3	.....	9	.....	9
Chief engineers	8	112	15	135	12	38	29	79
First assistant engineers	3	75	4	82	6	26	5	37
Second assistant engineers	1	116	3	120	10	26	3	39
Bay and river engineers	.....	119	1	120	1	160	.....	161
Total	44	642	68	754	117	401	95	613

Number of applicants examined by the Board on Philippine Marine Examinations during the fiscal year ending June 30, 1908.

Class.	Passed.	Failed.	Total.
Masters	4	1	5
Chief mates	9	4	13
Second mates	14	3	17
Third mates	9	7	16
Patrones, coastwise	5	13	18
Chief engineers	5	1	6
First assistant engineers	5	10	15
Second assistant engineers	5	14	19
Bay and river engineers	38	12	50
Bay and river patrones (no licenses issued, permits only)	16	.....	16
Total	110	65	175

From these statements it will be seen that there are available for immediate service 44 Americans, 642 Filipinos, and 68 foreign officers, a total of 754 of all classes and grades—a decrease of 20 from the number available at the close of the fiscal year 1907.

Officers holding expired licenses of all grades are represented as follows: Americans 117, Filipinos 401, and foreigners 95, or 613 in all. Of this number, it is estimated that 50 per cent are in the islands and able to secure a renewal of their licenses should they so desire. It is therefore safe to say that not less than 1,050 marine officers are available for service as needed, and as there are but 50 steamers in operation required to carry masters, chief engineers, and two officers, the supply of officers appears entirely adequate to the necessities of the service.

The present law relating to marine officers is not sufficiently comprehensive to meet the requirements, and, being distributed through several acts, is confusing to those affected. Therefore a draft of a new act, embodying the essential features of Acts Nos. 780, 1025, 1066, 1562, and 1602, together with certain changes looking to the improvement of the marine service, has been drafted, and will be presented for consideration at the next session of the Legislature.

REVENUE-CUTTER SERVICE.

During 1902 six small vessels of Chinese build were purchased in Hongkong for use as revenue cutters. It was soon found, however, that they were too small, slow, and unseaworthy to accomplish their purpose. Their trial speed was but little more than 8 knots per hour, and, after having been in the

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service a short time, their speed was reduced to such an extent that they were found practically useless in any attempt to overtake suspected craft. Their coal consumption averaged 20 tons per month each. As a matter of economy, therefore, two of these vessels were disposed of in February, 1907, and later in May, 1908, another, having become entirely unfit for further use by the Bureau, was sold at auction for $1,560, leaving in commission at the present time three revenue cutters, namely, the *Sula*, *Sora*, and *Skua*, described as follows:

Cutter.	Year built.	Cost (Mexican currency).	Length.	Beam.	Draft.	Indicated horsepower.	Tonnage.		Speed (per hour).	Coal capacity.	Water tank capacity.
							Gross.	Net.			
			Ft. in.	*Ft. in.*	*Ft. in.*				*Knots.*	*Tons.*	*Tons.*
Sula	1902	$18,000	91 1½	14 8½	8 11	90	72.59	49.36	8½	16	7
Sora	1902	15,000	86 0	13 8	7 7	82	51.13	25.74	8	16	7
Skua	1902	14,000	83 5	14 1½	7 0	.....	51.13	30.99	8	16	7

All built by K. H. Loong Company, of Hongkong.

The *Skua*, which is the best of the three, has recently been repaired, and is probably capable of 8½ knots speed under pressure. This cutter might be of some use for inshore work, if suitable vessels were available for the sea service required. The other two, the *Sula* and the *Sora*, are entirely worthless as revenue cutters, and can only be used for transporting officers and supplies to and from remote places. One of these cutters was stationed in the Jolo customs district during the entire fiscal year, and although smuggling from Borneo has been openly carried on throughout that district, the officers of the cutter were unable, from lack of power and speed, to overhaul any of the vessels carrying contraband. The impunity with which the revenue, immigration, and exclusion laws may be violated in the southern waters has led to increased smuggling, and tends to general lawlessness. The smuggling from Borneo of unauthorized persons, opium, and general merchandise is carried on in small, swift sailing vessels of from 5 to 15 tons burden, of which there are many hundreds in operation. In order to stop this traffic and to place the trade between Borneo and the Celebes with the Moro Province upon the same footing with other foreign trade of the islands, so that it could be properly controlled, the Legislature, by Act No. 1844 of June 1, 1908, withdrew the special privileges theretofore extended to small vessels of the Moro Province to engage in foreign trade, and prohibited the importation of merchandise from abroad into any part of the Philippine Islands in vessels of less than 30 tons, under penalty of forfeiture of both cargo and vessel. This was a wise enactment, and if the means to enforce it were furnished it would result in control of the traffic and substantial suppression of smuggling in southern waters; but in the absence of such means the law is practically a dead letter, being continually and openly violated with impunity.

This state of affairs is more serious than is generally understood, and if not soon rectified, must result not only in material loss to the revenue, but more or less demoralization to commerce generally, through the speculative character which fraudulent importations impart to it. In order to prevent such results, and to enable the enforcement of the customs, immigration, and navigation laws of the islands, this office recommended the purchase of three suitable vessels, large enough to remain at sea in any kind of weather, and fast enough to overtake the swiftest smuggling craft, for operation by this bureau as revenue cutters, in place of the "customs cutters" now in use. The total cost of such vessels, not less than 140 feet in length over all, with appropriate draft and beam, fully equipped, and capable of 16 knots mean speed per hour, was included in the last general estimate presented to the Legislature, at $250,000. A subcommittee of the committee on appropriation of the Assembly was appointed to investigate the subject and, after visiting the southern islands, conducting its inquiries at all of the principal ports therein, as well as at Sandakan, Borneo, and inspecting the vessels now in use, unanimously reported, with a comprehensive statement of the facts which led to the conclusions reached, that (1) the cutters now at the disposal of the customs service are absolutely

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insufficient, (2) what is needed are fast vessels of light draft, and seaworthy, with sufficient capacity for coal and provisions to remain at sea as long as necessary, in any weather, built with the special facilities demanded by the peculiar service required; and recommended the immediate purchase of two such vessels, the purchase of the third to be deferred, without prejudice, for consideration in connection with the next appropriation. This report was filed so late in the session, however, that time was not available for careful consideration of the question, and the bill finally presented, which was a still further modification of the original estimate, failed of passage. Thus, the coasts are still unprotected from illicit trade, and the southern waters are infested with pirates and smugglers, while the government is powerless to regulate sea traffic, protect the revenue, or enforce the exclusion laws therein. It can be readily understood, and a glance at the map will make it clearer, that to maintain a custom-house on any one of the southern islands, surrounded by hundreds of others, thickly populated, within a few hours' sailing of a foreign country where goods may be purchased out of bond duty free for export, without the police power to compel the entry of foreign merchandise and the payment of the legal duties thereon at the port of entry provided, is by no means an effective method of enforcing the law. Under such circumstances, the inhabitants of those islands have naturally fallen into the habit of importing directly from Borneo, without troubling themselves about customs formalities, and, as it is profitable to do so, they also transport Chinese coolies to their home islands, whence both coolies and merchandise, once having been landed, are distributed throughout the islands. The necessity of rectifying these conditions without delay, in order to protect legitimate commerce and other important interests of the islands involved, is urged, and to that end this office recommends, in harmony with the findings of the committee previously mentioned, that two suitable vessels, as described, be purchased or constructed for use of this bureau as revenue cutters, in which event two of those now in use will be disposed of and the other assigned to inshore duty.

The cost of maintaining the vessels which have been in commission during the fiscal year 1908 as "customs cutters," and which have rendered little service of value in protecting the revenue or enforcing the law, amounted to $30,376.10, whereas a slight increase in this expenditure would insure an effective service and more than compensate for the entire expenditure. The details of expenditures on account of "customs cutters" during the past year are shown by the following statement:

Purpose.	Sula.	Sora.	Skua.	Scooter.[a]	Total.
Salaries and rations	$5,304.21	$5,223.59	$5,222.83	$2,235.82	$17,986.45
Coal	2,729.43	907.86	1,195.78	1,288.19	6,121.26
Supplies	399.98	260.01	337.87	67.14	1,065.00
Equipment	211.05	236.18	4.73	155.96	607.92
Repairs	372.59	169.32	3,643.91	5.64	4,191.46
Miscellaneous, including freight on supplies, water, laundry, etc	82.71	50.71	45.23	225.36	404.01
Total	9,099.97	6,847.67	10,450.35	3,978.11	30,376.10

[a] Placed out of commission January, 1908.

PROTESTS AND APPEALS.

The number of protests filed by importers and exporters at Manila during the past fiscal year was 646, of which 40 raised constitutional questions, as against 543 protests, 95 of which were on constitutional points, for the previous fiscal year. The following tables show the volume and disposition of this work and the refunds involved during the past year:

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Protests filed and decided at the port of Manila and appeals to the insular collector of customs from subports and action taken thereon, during the fiscal year 1908.

Month.	Protests filed.			Protests decided.			Appeals.			
	Constitutional questions.	Other questions.	Total.	Constitutional questions.	Other questions.	Total.	Filed.	Affirmed.	Modified.	Total decided.
1907.										
July	1	47	48	1	42	43	2	.....	.....	.....
August	3	47	50	3	38	41	1	1	.....	1
September	3	50	53	3	33	36	1	.....	1	1
October	2	51	53	2	22	24	3	.....	2	2
November	6	42	48	6	19	25	1	1	.....	1
December	2	40	42	2	14	16	.....	.....	.....	.....
1908.										
January	2	41	43	2	9	11	.....	.....	.....	.....
February	2	57	59	2	7	9	5	1	.....	1
March	.....	79	79	.....	5	5	2	1	.....	1
April	7	55	62	7	3	10	1	.....	.....	.....
May	6	41	47	6	.....	6	1	1	.....	1
June	6	56	62	6	.....	6	2	.....	.....	.....
Fiscal year	40	606	646	40	192	232	19	5	3	8

Refunds on protests at Manila, protests at subports, and appeals to the insular collector, fiscal year 1908.

Month.	Manila.	Subports.			
		Iloilo.	Cebu.	Zamboanga.	Jolo.
1907.					
July	$97.42	$3.01	.....	.....	$49.50
August	786.82	.....	.....	$68.21	.....
September	981.92	75.21	$14.08	.....	.....
October	659.81	24.81	5.43	.....	.....
November	4,121.62	278.75	.....	.....	.....
December	161.00	.....	129.57	.....	.....
1908.					
January	462.36	.....	121.38	.....	.....
February	31.64	.....	56.64	.....	.....
March	829.90	.....	.....	.....	.....
April	5.96	.....	2.66	.....	.....
May	562.07	.....	10.20	.....	.....
June	41.74	.....	.....	.....	.....
Fiscal year	8,742.26	381.78	339.96	68.21	49.50

Of the $4,121.62 refunded in Manila during November, $2,612.50 was by order of the court of first instance, Manila.

Of protests filed during the past fiscal year there remain, for July, 5; August, 9; September, 17; October, 29; November, 23; December, 26; January, 32; February, 50; March, 74; April, 52; May, 41; and for June, 56 as yet undecided, making a total of 414 for the year.

In addition to the 232 decisions rendered on protests filed during the year, 198 were on protests filed prior to that time, making a total of 430 rendered during the fiscal year.

Of the 192 protests on other than constitutional questions decided, 80 were sustained—some in part only—and 112 were overruled and denied, of which but 3 were appealed to the court of first instance, Manila. Two of these appeals were decided by the court, both of which confirmed the decisions of this office.

There are a number of protests filed prior to July 1, 1907, which are being held pending decisions of the court of first instance, Manila, and of the supreme court of the Philippine Islands.

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A large proportion of the undecided protests filed during the past fiscal year were also on questions on which appeals have been taken to the courts from former decisions of this office, and these are being held pending decisions therein. Others are being held at the request of protestants awaiting documentary evidence.

IMMIGRATION.

GENERAL IMMIGRATION.

From Statement No. 39 it will be observed that the total number of new immigrants was 574 less than last year. There were, however, nearly 800 less Chinese arriving for the first time than heretofore, so that the total volume of immigrants other than Chinese is slightly greater than last year. The greatest increase is in respect to British, Germans, French, and other Europeans, the net increase from this source alone being 158. The non-Chinese Asiatic immigration shows an increase of 11, the East Indians having increased by 43 and other non-Chinese Asiatics having fallen off by 32.

The statistics in respect to returning aliens show about the same condition of affairs. Again, a marked decrease in the number of returning Chinese is the principal item to be noted. There was an increase of 20 returning Europeans, and a slight decrease in non-Chinese Asiatics. The Japanese furnished the largest number of non-Chinese immigrants, and Spaniards the largest number of non-Chinese returning residents.

Immigration movements at all entry ports recorded by the bureau during the year, as compared with those of 1907, show a decrease in passenger arrivals in 1908 of 1,653, and in departures of 1,288. The nationalities represented by persons entering and leaving the Philippines during the two comparative periods are shown by the following statement:

Statement of the number and nationality of passengers arrived at and all persons departed from all ports of the Philippine Islands during the years 1907 and 1908.

Nationality.	Passengers arrived.				All persons departed.			
	1907.	1908.	Increase.	Decrease.	1907.	1908.	Increase.	Decrease.
Americans	3,058	3,521	463	.....	2,028	1,901	.....	127
Filipinos	823	802	.....	21	722	981	259	.....
Spaniards	544	436	.....	108	498	460	.....	34
Japanese	374	381	7	.....	318	266	.....	52
British	328	463	135	.....	288	372	84	.....
Germans	93	135	42	.....	89	107	18	.....
Italians	49	39	.....	10	.....	.....	.....	.....
French	37	87	50	.....	44	65	21	.....
Other Europeans	134	243	109	.....	62	57	.....	5
East Indians	85	157	72	.....	72	85	13	.....
Chinese	8,141	5,735	.....	2,406	7,122	5,829	.....	1,293
Other Asiatics	36	89	53	.....	.....	.....	.....	.....
Miscellaneous	196	157	.....	39	485	313	.....	172
Total	13,898	12,245	931	2,584	11,724	10,436	395	1,683
				931				395
Net decrease	.....	.....	.....	1,653	.....	.....	.....	1,288

Further detailed information regarding immigration movements and transactions, including those under the exclusion laws, at all ports during the fiscal year 1908, as compared with previous years, is afforded by the statements and tables contained in Exhibit F [a] of the Appendix.

CHINESE IMMIGRATION.

Of the 1,113 ships boarded by the immigration inspectors at the various ports of the Philippine Islands, 656 had Chinese crews or Chinese transit passengers on board to the total number of 30,254, who had to be checked off, both on arrival and departure, by the immigration officers. During the year there were manifested to insular ports on incoming vessels 5,844 Chinese. Of these, 1,736

[a] A number of these statements and tables have been omitted and filed in the Bureau of Insular Affairs, War Department.

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came before boards of special inquiry (921 at the port of Manila), while the remainder (4,108) were returning residents who possessed custom-house certificates evidencing their right to return, and were landed upon inspector's examination. Of those passed by the boards, there were 33 persons of the exempt class coming on section 6 certificates; 669 minor children, of whom only 18 were females; 26 wives; and 1,008 others, including Chinese born in the Philippine Islands. Comparison with the year 1907 shows that the number of Chinese arriving for the first time with section 6 certificates has decreased from 320, or, omitting 208 actors, from 112 to 33. The number contributed by the principal Chinese ports for the last three years (excluding actors) was as follows:

Port.	1906.	1907.	1908.	Port.	1906.	1907.	1908.
Amoy	42	28	6	Shanghai	5	4	2
Hongkong	.....	3	2	Formosa	2	1	8
Canton	1	4	2				
Foochow	5	72	13	Total	55	112	33

MINOR CHILDREN.

Attention was called last year to the importation of Chinese slaves notwithstanding the efforts of the immigration authorities to prevent it. Under this system small children are brought into the islands for sale, rent, or use, by persons claiming them as their children. It is of course impossible to make even a rough estimate as to the percentage of cases in which children are brought to these islands by their own fathers from a desire to secure their education here, or for the purpose of enjoying their society and of guiding and protecting them during the tender years of their youth. It is believed, however, that the restrictive measures taken during the past year have eliminated a large number of the fraudulent or slave cases, for, whereas there were brought to the port of Manila, during 1906, 511 Chinese children, of whom but 49 were over 16 years of age, and 938 in 1907, of whom 125 were over 16 years, this past year there have been brought but 569 children, of whom 136 were over 16 years. Of this 569, 18 were females, and the total number of minor children applying at all ports was 717, which was considerably less than the number applying at the port of Manila alone during the fiscal year 1907. The decrease in the number was almost entirely due to the adoption, in accordance with the terms of section 12 of Act No. 702, of the same rigid definition of the term "merchant," as applied to local dealers, that is current in the United States. This has eliminated petty shopkeepers, industrial partners, manufacturing artisans, etc.

The recommendation is renewed that the age at which Chinese shall be presumed to have ceased to need the parental oversight, care, and control (in re Mrs. Gue Lim, 176 U. S., 459, and cases cited) be restored to 16 years, the age of majority under Chinese law. It is certainly excessive liberality to hold that a person who has attained majority in his own country and is legally considered a full-grown man, who is expected to become the head of a family without delay, is nevertheless a mere child, needing the parental care, support, and guidance as soon as he seeks to enter these islands and compete in commercial pursuits with the inhabitants thereof. It will be noted from Statement No. 45[a] that the percentage of provincial cases applying to Manila has fallen from 51.5 per cent for the first eight months, or 48.81 per cent for the entire fiscal year 1907, to 46.35 per cent, which again testifies to the efficacy of the new regulations. So also does the fact that, as shown from Statement No. 49,[a] this is the first year since American occupation when the number of departures of Chinese has exceeded the number of arrivals.

REJECTIONS.

Attention is invited to Statement No. 47[a] of the Appendix showing the percentage of Chinese refused landing out of all those who have applied for admission. The proper comparison, however, is not between the number applying for admission and those rejected, but, rather, between those who came before the boards of special inquiry and those rejected. It appears that during the fiscal year 1904, 156 out of 602, or 26 per cent of those detained, were rejected:

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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in 1905, 38 out of 464, or 8 per cent; in 1906, 19 out of 701, or a little less than 3 per cent; in 1907, 71 out of 1,565, or 5 per cent; and, for the fiscal year last past, 87 out of 988, or 9 per cent.

HABEAS CORPUS.

During the past year 39 cases have been tried on behalf of this office by the attorney-general in the court of first instance, of which 20 were taken on appeal to the supreme court. This number together with 10 original actions brought in the supreme court makes a total of 49 cases. Three decisions favorable to the government were rendered by the court of first instance which were not appealed, and 18 by the supreme court, 16 of them favorable to the government and 2 unfavorable because of failure to appeal within the time allowed by law; leaving 12 cases pending in the supreme court and 16 in the court of first instance at the end of the fiscal year.

CHINESE AND IMMIGRATION RULINGS.

The following circulars contain the more important rulings of this office, bearing upon the administration of the immigration and exclusion laws, during the fiscal year:

"In Chinese and Immigration Circular No. 193 the ruling was adopted that children born in the Philippine Islands since April 11, 1899, of alien parents, are citizens of the Philippine Islands. This was subsequently reversed, however, to conform to a ruling of the Secretary of State on the same subject.

"Chinese and Immigration Circular No. 194 amends the current regulations in various respects and especially regulates the manner of applying for indorsement as resident Chinese merchants. Experience has shown that the stereotyped affidavits are not always reliable, and that where neither the applicant himself nor any of his alleged partners have committed themselves in writing as to the existence of a certain firm or to the fact that the applicant's membership therein, it is never possible to bring the blame for a fraudulent case home to the parties really guilty. Under the new rule the applicant makes a signed application which is accompanied by an affidavit by his partners, if any, and it is believed that this new form has discouraged evasions of the law to a marked degree. In this circular also a more liberal interpretation was given to the definition of the term 'student,' and the jurisdiction of this office to arrest persons of the Chinese race on administrative warrant asserted. The claim of the right to take such action has subsequently been approved by the court of first instance of this city. [Note Chinese and Immigration Circular No. 201.]

"By Chinese and Immigration Circular No. 196 the law in respect to the imposition of the immigration tax was so construed as virtually to exempt all tourists from its burden. This was done by taking advantage of the fact that the law imposes the tax only upon aliens who 'enter' American territory, and it was ruled that persons who merely pass in transit through or whose stay is so short as to indicate an intention not to 'enter' are not subject to the tax.

"Chinese and Immigration Circular No. 197 publishes a decision of the court of first instance at Cebu, sustaining the jurisdiction of the immigration authorities over cases in which no abuse of authority has occurred.

"Chinese and Immigration Circular No. 198 issued special regulations for the treatment of travelers' certificates issued in China to persons desiring to visit the Philippine carnival of 1908.

"Chinese and Immigration Circular No. 201 publishes a court decision which sustains the right of this office to issue administrative warrants for the arrest of persons of the Chinese race alleged to have entered the islands unlawfully.

"Chinese and Immigration Circular No. 203 publishes a ruling of this office to the effect that the minor son of a resident merchant has no right of entry where his father is about to relinquish his local commercial domicile.

"Chinese and Immigration Circular No. 204 publishes a ruling to the effect that questions of fact determined by a board of special inquiry ought not to be reviewed by the insular collector of customs in the absence of abuse of authority on the part of the board.

"Chinese and Immigration Circular No. 205 publishes a ruling to the effect that the minor son of a resident merchant should not be admitted if it appeared that he was actually coming to the Philippine Islands for the purpose of becoming a laborer.

"Chinese and Immigration Circular No. 208 publishes a ruling of this office to the effect that a board of special inquiry can not attack an immigration

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decision collaterally, and can not find that a person actually in the country is unlawfully here, save in a direct proceeding to which that person is a party and in which he has an opportunity of being heard.

"Chinese and Immigration Circular No. 209 publishes a ruling upon the question of citizenship and draws a distinction between 'native-born aliens' and 'citizens of the Philippine Islands.'"

IMMIGRATION FINANCES.

Statement No. 50 shows the immigration dues and other charges collected during the fiscal year, 1908, by sources. From this table it appears that the immigration tax, which is charged on all incoming aliens, amounts to $30,294, and is the largest single source of revenue. The total receipts from immigration at all ports were $39,834, whereas the expenditures only aggregated $26,813.48; so that the immigration service, as a whole, is not only self-supporting, but actually yields a revenue to the general government.

In the United States the receipts from immigration sources are put into a special fund, known as the "immigration fund," for use in connection with that service, and it is recommended that balances accruing here should be made available, so far as may be necessary, each year for the payment of charges incident to the enforcement of the immigration laws, such as the cost of deporting aliens who have entered unlawfully, or have become public charges since landing, etc.

CHINESE POPULATION.

It will be noted from Statement No. 48 that there were registered in 1903 very nearly 50,000 Chinese. The board of health figures show a death rate for Chinese of 18.69 per cent per 1,000 per annum, so that of the Chinese then in the islands there must have died during the five years which have since elapsed 4,673, but the net excess of arrivals over departures, as shown by Statement No. 49,[a] during the same period was 8,267, so that there has been a net gain to the islands of 3,594.

Of landing certificates, 3,880 have been issued during this period. A discrepancy between arrivals and applications for landing certificates was caused by the fact that the application for a landing certificate is sometimes delayed and (especially when there is a claim to native citizenship) may not be made at all.

If it be assumed that 581 Chinese were residents of the islands prior to 1904, but failed to register, and that those smuggled in have averaged 1 per day, or 1,825 for the five years, it would indicate that the probable foreign-born Chinese population at the present time is about 56,000, of which perhaps 20,000 or 25,000 reside in the city of Manila and the rest throughout the provinces.

It is not customary for the Chinese in these islands to register at the Chinese consulate, and therefore no accurate figures can be obtained from this source. It is understood, however, that the consular estimates have never been less than 60,000, and that they now place the population at 61,000 to 62,000. Whatever be the exact figures, it is evident that up to the present year the effect of the Chinese exclusion laws has not been either to decrease the Chinese population or even to hold it stationary.

CONSULAR DUTIES.

SEAMEN.

Eighty-three seamen were shipped on and 217 were discharged from American vessels during the year. Eight destitute American seamen were returned to the United States at the expense of the State Department. Applications for relief continue to be frequently made by seamen honorably discharged from army transports and nonmilitary naval vessels. It would be a saving to the Government and result favorably to the interests of all concerned if, as heretofore recommended, seamen on such vessels were required to be shipped and discharged in Philippine ports before the same officers and subject to the same conditions as seamen on American merchant vessels.

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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CONSULAR INVOICES.

A ruling by the Secretary of the Treasury of the United States, published in Customs Administrative Circular No. 506, under date of June 2, 1908, requires, in effect, that the invoices of all merchandise shipped from the Philippine Islands to the United States shall be certified by collectors or deputy collectors of customs of the Philippine Islands. The additional duties imposed upon customs officers by this construction of section 2844 of the Revised Statutes of the United States, as amended, is considerable, but the labor involved is fully compensated by the more complete and accurate information thus obtained concerning the quantities, destinations, and values of products exported. The fee for certifying these invoices is, under section 373 of the customs administrative act, the same as that charged for similar service by United States consuls at foreign ports ($2.50), and is collected by the affixture of "official fee" stamps to the duplicate invoices. The proceeds of such fees are, under the law, turned in as customs receipts, but it is believed that this charge upon the Philippine products shipped to the United States is too high, and that it should be reduced to a nominal fee, merely sufficient to cover the expense involved. It is therefore recommended that the charge be reduced to 50 cents per regular set of invoices, and treated in connection with other proposed amendments to the customs administrative act relating to fees.

PROPERTY AND SUPPLIES.

All property and supplies required for use by the bureau of customs, including those for use at subports and by revenue cutters, are furnished through the property section, in which is maintained a record of all stock on hand, requisitions received, and articles issued. During the year a radical improvement in the method of handling requisitions and in accounting and caring for the immense amount of property and supplies involved has been made. Prior to October, 1907, all customs property and supplies were carried and accounted for on quarterly returns to the insular auditor, the numerous articles being stated by number or quantity and designation only. The increasing extent of the work and value involved in the transactions effected from year to year had not only outgrown the former system of accounting, but made it necessary, in order to maintain an accurate record of the expense involved and the money represented by permanent equipment, to inaugurate a system that would accomplish these desired results. The new plan adopted and now pursued is, in a general way, as follows:

The property clerk maintains a stock of property and supplies in sufficient quantity to meet the ordinary and current requirements of the service. Upon receipt of articles for this stock, they are listed on stock record cards by name, lot number, and invoice number, and the cost charged to a stock suspense account. Upon distribution, or issue, a corresponding credit in value and quantity is entered on the stock card and in the suspense account, and the charge transferred to the office or branch of the service to which issue is made, appearing upon the books, in the case of expendable supplies, as an expense of that office or branch of the service for supplies, or if unexpendable property, as a charge to permanent equipment. In the latter case, a corresponding entry is made on a record card, kept by the property clerk, showing the location of permanent equipment, as well as on a similar record maintained in the office or branch of the service in which the equipment is in use.

Heretofore the cost of supplies and property has, for the reason that all bills for the same were paid by the central office, been charged to the customs service at the port of Manila, but by the new method of distribution it is possible not only to keep an accurate record of the total amount expended for supplies and property, but to show its distribution and properly charge the cost thereof to those branches of the service for the benefit of which the expense was incurred.

A large quantity of old, useless, and worn-out articles which had been accumulating for years has during the past year been gradually segregated from the current stock, listed, acted on by an inspector representing the bureau of audits, and sold. These articles included a number of typewriters, a quantity of sheet rubber, and many other miscellaneous items, the total proceeds of the sale of which amounted to $882.94. In addition to this, the bureau sold the customs cutter *Scoter*, which had become unserviceable, for $1,560; also the launch *Daisy*, likewise unfit for further service, for $750. The bureau was thus relieved from considerable useless property which had become a source of expense, realizing from its disposition $3,197.94.

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As the new system of accounting has not yet been extended to subports, upon issue of property and supplies thereto the respective collectors of customs become accountable to the insular auditor direct and still render statements to him in the form of quarterly returns, the insular collector of customs being relieved from responsibility therefor upon receipts covering the issue so made. The property clerk at Manila, however, maintains a record of the value of furniture, fixtures, and other equipment pertaining to the port of Manila, and to the revenue-cutter service. The value and distribution of equipment at the port of Manila, and of the revenue-cutter service, and property supplies in stock, for which the insular collector of customs was accountable at the close of business June 30, 1908, was as follows:

Manila custom-house, furnishing and equipment		$33,861.14
Arrastre plant		20,383.17
Harbor launches and equipment:		
Launch No. 1	$7,450.96	
Launch No. 2	3,189.72	
Launch No. 3	3,279.11	
Launch No. 4	5,053.48	
Launch No. 5	7,385.94	
Launch No. 7	1,313.18	
Launch No. 9	2,680.76	
Total value launches and equipment		29,012.77
Revenue cutters and equipment:		
Cutter Sora	$7,747.25	
Cutter Skua	7,642.45	
Cutter Sula	7,721.30	
Total value cutters and equipment		23,111.00
Property and supplies in stock		27,358.22
Total value of equipment and stock		133,726.30

Much of the equipment covered by the above valuations had been in use for a number of years, and was therefore appraised at the time its value was taken up in the accounts, due allowance having been made for deterioration.

ACCOUNTING SYSTEM.

In accordance with the provisions of Act No. 1792 of the Philippine Commission and Circular No. 43 of the Bureau of Audits, commencing with the month of November, 1907, disbursements to meet the expenses of the bureau of customs at all ports except those in the Moro Province were made in the following manner. Sufficient funds to meet current monthly expenditures were advanced on accountable warrants to disbursing officers at subports. Payments having been made from such funds, vouchers covering the same were forwarded with the corresponding abstracts to the office of the insular collector of customs, and after verification thereof, reimbursement warrants to cover were drawn in favor of the respective disbursing officers, signed by the insular collector of customs and submitted to the auditor for approval, thereafter, if approved, being sent to the officer by whom the disbursements were made to reimburse his advance fund from which the original payment was effected. This method not only provides for a pre-audit of all disbursements, but gives the chief of the bureau direct supervision over all expenditures and enables him to maintain complete records thereof.

Thus it was possible to establish a system of accounts embracing all disbursement transactions, including those of the Moro Province ports, concerning which, monthly statements are furnished this office directly by the collectors at those ports.

In connection with the disbursement accounts there are maintained properly classified records of the receipts of each office or branch of the service from which revenue is derived.

The new system provides for the distribution of all expenditures and receipts in such manner as to show the cost of operating each office and branch of the service, and the proportion contributed by each toward the gross receipts of the bureau. From a year's record under this system it will be possible to ascertain the exact cost per dollar of collecting import and export duties and other purely customs revenue; the cost of maintaining the immigration service and the receipts accruing from its operation; as well as the expense involved

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and moneys derived from each of the other distinct branches of the service. Heretofore the cost of supplies and property for the entire bureau, bills for which were paid by the Manila office, appeared as a part of the expenses of the port of Manila, while under the new system the cost of supplies and property, as well as all other expenses, are charged directly to the office or branch receiving the property or on account of which the money is expended.

The new accounts are kept by means of 10 registers, journals, ledgers, cash and record books. The general disbursement accounts are classified under each subdivision of the bureau and in accordance with the distribution prescribed by the bureau of audits, as well as in accordance with headings under which appropriations are made. The new system as a whole was put in effect January 1, 1908, since which date a complete and permanent classified record of all receipts and expenditures is available.

PRE-AUDIT OF CUSTOMS ACCOUNTS.

The pre-audit system inaugurated by the acting insular auditor is an innovation of great benefit to both the public and the government. Under this plan, and in the absence of fraud that can not be detected upon the face of the documents involved, there is no review of transactions after they are completed by receiving and disbursing officers; whereas, under the old scheme of auditing, importers were often called upon to pay additional duties months after the merchandise affected had been sold upon the basis of charges paid, resulting sometimes in serious loss.

This system was put in force at the port of Manila November 1, 1907, and although there were some misgivings at the time concerning the delays that might be occasioned thereby in the final liquidation and payment of duties, no inconvenience has been caused and the time required in the coursing of entries has not been noticeably lengthened. In fact, with the new relative arrangement of the divisions through which entries must pass, and the elimination of "doubling back" in their progress to the cashier, the time now consumed in coursing documents, including that taken up in auditing them, is considerably less than before.

In order to expedite this work a convenient office, adjoining the cashier's division, was furnished for the use of the assistant auditor in charge of customs accounts and his assistants; and all customs documents involving cash transactions now pass through that office, and are audited therein before reaching the cashier for collection or payment. Thus the auditing of customs accounts is kept up to date, and the greatest protection to the revenue, obtainable through that means, secured.

HARBOR LAUNCH SERVICE.

There are in use by the bureau of customs at Manila, for furnishing transportation to its officials to and from vessels in the harbor and river, 7 steam launches, 2 of which are 22 feet in length, 3 from 49 to 52 feet in length, and 2, 77 feet in length. The long time these launches have been in service and the constant and hard work required of them has necessitated considerable outlay for repairs for their maintenance in serviceable condition during the past year. No one of the launches has been in active service for less than four years, and some of them since 1897, as will be seen by the following statement of the dates of construction:

	Year built.
Launch No. 1	1897
Launch No. 2	1900
Launch No. 3	1899
Launch No. 4	1904
Launch No. 5	1903
Launch No. 7	1903
Launch No. 9	1896

The requirements of the service at the port of Manila are such that it is necessary for all of the available launches to be in constant operation from daylight to sunset, in addition to which some are on duty throughout the night. Nothwithstanding the care exercised in their operation, this continuous service, which would tax even new vessels to the utmost, involves an expense for proper maintenance that must increase at such a rate that in the interest of economy and efficient harbor service they should be replaced by new launches with the

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least practicable delay. The following statement of the cost of repairs during the past fiscal year will indicate the extraordinary expense thus incurred:

Launch No. 1	$2,588.43
Launch No. 2	540.43
Launch No. 3	1,578.11
Launch No. 4	1,053.95
Launch No. 5	3,051.42
Launch No. 7	431.40
Launch No. 9	557.71
Total	9,801.45

Launch No. 4 was purchased by the bureau of customs in October, 1907, for $5,000, having been built in Hongkong in 1904, and used by a Manila firm since that date and until purchased by this bureau. This launch is in better condition than the others, which have been in the service longer, and in the event of the purchase of new launches from time to time to replace those now in operation, Nos. 4, 5, and 7 might be retained until last. In view of the present demands upon the launch service and the probability of early embarrassment to the harbor work through some of these launches becoming entirely unserviceable, it is recommended that provision be made without delay for the acquisition of three new vessels.

The subjoined table contains a description of all launches now operated by the bureau of customs, including those at subports, and in the event of the purchase of new launches they should, as has been demonstrated by the operation of the present vessels for a number of years, be equal in efficiency and size to the larger ones now in service.

Descriptions of customs launches.

Launch.	Built.	Length.	Beam.	Draft.	Indicated horsepower.	Tonnage.		Speed.	Station.
						Gross.	Net.		
		Ft. in.	Ft. in.	Ft. in.				Knots.	
No. 1	1897	76 0	12 4	6 3	70	41.07	20.05	8	Manila.
No. 2	1900	52 1	9 10	4 9	50	16.35	11.30	8	Do.
No. 3	1899	51 6	9 9	5 0	30	17.01	8.57	7½	Do.
No. 4	1904	53 4	10 9	4 8	45	20.84	12.79	9	Do.
No. 5	1903	77 10	13 7	5 4	85	36.58	23.31	8½	Do.
No. 7	1903	22 9	6 8	2 8	9	2.56	1.74	5	Do.
No. 9	1896	23 8	7 3	4 0	15	3.88	2.64	6	Do.
Lapu Lapu	1897	50 0	10 2	4 10	50	15.32	10.42	7	Cebu.
Alix	1894	53 9	10 0	7 0	10	13.98	6.25	7	Iloilo.

The cost of operating each of the harbor launches at the port of Manila during the fiscal year 1908, including salaries of crews, fuel, supplies, and repairs, is shown by the following statement:

Statement of expenditures on account of harbor launches, port of Manila, during the fiscal year 1908.

Launch.	Salaries.	Supplies.	Coal.	Equipment.	Clothing.	Repairs.	Total.
No. 1	$2,129.89	$132.14	$991.17	$28.32	$37.80	$2,635.76	$5,955.08
No. 2	1,810.45	145.62	645.18	6.90	37.80	585.37	3,231.32
No. 3	2,394.55	181.63	668.50	37.92	37.80	1,621.05	4,941.45
No. 4	2,483.77	189.89	905.40	17.56	37.80	1,100.80	4,735.22
No. 5	2,207.67	142.04	1,191.24	8.11	37.80	3,065.94	6,652.80
No. 7	563.00	54.36	133.30	1.16	9.45	440.47	1,201.74
No. 9	935.38	75.39	192.43	7.29	14.18	566.78	1,791.45
Total	12,524.71	921.07	4,727.22	107.26	212.63	*10,016.17	28,509.06

* Includes outstanding accounts with the Bureau of Navigation, amounting to $6,249.40.

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ARRASTRE PLANT.

The arrastre plant was purchased and has been operated by the bureau of customs under the authority of Act No. 897 of the Philippine Commission of September 23, 1903. It consists of steam cranes, tramway, locomotives, cars, machinery, and other appliances, installed on the customs premises, for use in the landing, conveyance, storing, and delivery of merchandise. Charges are paid by merchants for services rendered and receipts therefrom are deposited by the insular collector of customs with the insular treasurer as a permanent fund, subject to withdrawal by the former for disbursement to cover the expenses of operation, maintenance, and permanent improvement. The policy observed in the operation of this plant has been to render efficient service to merchants at a minimum cost sufficient to cover current expenses and depreciation of equipment and to provide for improvements. The methods employed when the plant was first acquired have been improved upon from year to year until it is believed that the work is now performed with the minimum expense consistent with the highest degree of efficiency. Considerable credit for the results recently attained has been due to a careful study of methods involved by two special boards appointed during the year and the adoption of plans formulated thereby. The most notable innovation in the system of handling merchandise has been the enormous increase of wharf in lieu of warehouse deliveries, from 16.7 per cent of the total deliveries in 1904 to 43.4 per cent in 1908, thus benefiting the merchant to the extent of $0.18 per ton. Further improvements, already mentioned elsewhere in this report, will eliminate the arrastre tramway as an important factor in the operation and make the handling of all merchandise by hand trucks at a less expense practicable.

The following statement shows the amount of work performed by the arrastre plant, the cost thereof, and the number of persons employed during the five fiscal years 1904 to 1908, inclusive:

Work performed.

Fiscal year.	Packages handled (number).	Deliveries.					Days of labor required.	Tons handled per laborer per day.
		From wharf.		From warehouse.		Pasé (tons).		
		Tons.	Per cent.	Tons.	Per cent.			
1904	1,849,022	11,511	16.7	56,610	83.3	51,579	25,577	2.663
1905	1,038,925	31,430	31.5	68,084	68.5	42,375	20,231	4.918
1906	1,076,602	36,747	36.9	62,782	63.1	30,267	18,809	5.291
1907	994,588	38,249	38.9	59,861	61.1	21,811	17,961	5.462
1908	1,040,359	44,008	43.4	57,331	56.6	29,701	22,168	4.571

Receipts and expenditures.

Fiscal year.	Receipts (gross).	Refunds.	Receipts (net).	Expenditures.	Margin of profit.	Cost of labor (per ton).	Total cost of handling (per ton).	
							From wharf.	From warehouse.
1904	$60,784.62	$11,962.80	$48,821.82	$31,781.67	$17,040.15	$0.154	$0.376	$0.533
1905	57,968.05	27.54	57,940.51	36,865.30	21,075.21	.089	.288	.409
1906	56,346.85	74.75	56,272.09	46,597.48	9,674.61	.077	.374	.499
1907	55,481.70	.....	55,481.70	43,982.68	11,499.02	.076	.331	.523
1908	55,473.39	.....	55,473.39	51,675.99	3,797.40	.091	.391	.604

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Persons employed.

Fiscal year.	Americans.	Filipinos.	Spaniards.
1904	8	58	3
1905	4	49	2
1906	[a] 9	[a] 88	[a] 4
1907	8	78	2
1908	6	91	3

[a] Employees increased due to the consolidation of former general order stores and bonded warehouse division with the arrastre plant, December 1, 1905.

NOTE.—The increase in the cost of handling cargo per ton during the fiscal year 1908 was due to expenditures for improvements now in progress, which will result in a reduction of the rate when such improvements have been completed.

The subjoined statement shows the financial transactions of the arrastre plant during the fiscal year 1908:

DEBITS.

Balance on deposit with insular treasurer July 1, 1907	$2,744.34	
Balance with disbursing officer, arrastre plant, July 1, 1907	1,239.43	
Cash on hand, July 1, 1907	1,966.01	
On deposit in local bank, same date	37,500.00	
		$43,449.78
Arrastre collections during the year	55,473.39	
Interest on bank deposit, one year at 3½ per cent	1,312.50	
		56,785.89
Total debits		100,235.67

CREDITS.

Expenditures:		
Contingent	$3,446.22	
Plant improvements	3,040.99	
Salaries	34,842.74	
Extra services, customs employees	12.95	
Wages, laborers	9,216.58	
Repairs	1,089.05	
Reimbursement of losses to importers on account of damaged merchandise	27.46	
		$51,675.99
Balance on deposit with insular treasurer June 30, 1908	7,486.46	
Balance with disbursing officer June 30, 1908	685.26	
Cash on hand, same date	1,575.46	
On deposit with local bank, same date	38,812.50	
		48,559.68
Total credits		100,235.67

Recapitulation.

Arrastre collections, fiscal year 1908	$55,473.39	
Interest received	1,312.50	
Contingent supplies purchased during the fiscal year 1908	----------	$3,446.22
Permanent supplies and improvements	----------	3,040.99
Repairs to machinery, building, cars, etc	----------	1,089.06
Paid for laborers' wages	----------	9,216.57
Paid for extra services, customs employees	----------	12.95
Paid for salaries, permanent employees	----------	34,842.74
Paid for losses of imported merchandise	----------	27.46
		51,675.99
Balance	----------	5,109.89
	56,785.89	56,785.89

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Net profit during fiscal year	$5,109.89
Invested in permanent improvements during fiscal year	3,040.99
Surplus	8,150.88

COALING STATIONS.

Seven coaling stations have been maintained and operated by the bureau of customs during the past fiscal year, in accordance with the provisions of Act No. 1361; i. e., at Cebu, Iloilo, Jolo, Puerto Princesa, Romblon, Tacloban, and Zamboanga. Stations formerly maintained at Bongao and Dumaguete had been discontinued during the previous year, although all the coal thereat was not disposed of until some time during the fiscal year 1908. Coal is furnished by these stations for use on government vessels and for other official purposes. The stations are under the supervision of government officials, who perform the duties pertaining thereto in connection with their other official work. The stations at Cebu, Iloilo, Jolo, and Zamboanga are in charge of the collectors of customs at those ports, and the other stations are in charge of provincial officials, designated by the insular collector of customs upon the approval of the secretary of finance and justice.

The following statement shows the amount of coal sold at each coaling station during the fiscal year 1908, the cost thereof and expense incurred in handling, receipts from sales, and the net profit from the total operations at all stations:

Statement of operations of coaling stations, fiscal year 1908.

Station.	Sold.		Cost.	Expense.	Total cost.	Invoice price.	Surcharge.	Total.	Profit.	Loss.
	Tons.	*lbs.*								
Cebu	2,553	798	$16,565.63	$1,398.11	$17,963.74	$16,565.63	$1,656.59	$18,222.22	$258.47	
Iloilo	1,702	265	11,097.87	898.98	11,996.85	11,097.87	1,109.81	12,207.68	210.83	
Jolo	325	1,992	2,309.79	837.64	3,147.43	2,309.79	333.17	2,642.96		$504.47
Puerto Princesa	218	524	1,773.46	384.49	2,157.95	1,773.46	190.84	1,964.30		193.65
Romblon	776	283	5,115.47	561.88	5,677.35	5,115.47	675.59	5,791.06	113.72	
Tacloban	1,316	1,120	9,050.34	786.73	9,837.07	9,050.34	905.05	9,955.39	118.31	
Zamboanga	3,976	204	27,851.29	1,552.89	29,404.18	27,851.29	2,785.13	30,636.42	1,232.24	
Bongao	41	110	305.79	5.25	311.04	350.94	[a] 35.09	386.03	75.00	
Dumaguete	115	0	827.22	21.07	848.29	748.75	[b] 37.50	786.25		62.04
Lucena	65	0	624.00		624.00	137.50	(c)	137.50		486.50
Total	11,089	816	75,520.86	6,447.04	81,967.90	75,001.04	7,728.77	82,729.81	2,008.57	1,246.66
Net profit										761.91

[a] 5 tons 644 pounds found at station; value, $45.15.
[b] 65 tons sold at auction at loss of $78.48.
[c] 65 tons sold at auction at loss of $486.50.

Upon completion of the year's transactions there were on hand at the several coaling stations 2,032 tons, representing a value of $14,636.47, distributed as follows:

Station.	Quantity.		Value.
	Tons.	*lbs.*	
Cebu	195	0	$1,356.72
Iloilo	470	357	3,271.13
Jolo	326	956	2,319.59
Puerto Princesa	141	492	1,298.16
Romblon	352	1,197	2,504.75
Tacloban	487	258	3,460.95
Zamboanga	59	1,837	425.17
Total	2,032	617	14,636.47

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The coal supplied the coaling stations during the year was obtained from Australia on contract, through the insular purchasing agent, at $5.74 per ton, delivered at the coal pile. To cover the cost of subsequent handling, care, etc., a surcharge of not exceeding 15 per cent is authorized to be included in the selling price upon issue, under authority of Act No. 1361. At some stations but 10 per cent has been charged, notwithstanding which the year's operations have resulted in a gain of $1,248.41, which produced a credit to coaling stations, including the value of coal on hand, of $16.72 in excess of the original value as invoiced to the bureau of customs by the insular purchasing agent, in pursuance of executive order of the governor-general No. 23, dated May 1, 1907, as will be seen by the following table:

Value of coal supply transferred to the bureau of customs, by the bureau of supply, pursuant to executive order No. 23 of date May 1, 1907, as per adjustment of the bureau of audits		$34,324.15
Value of coal on hand at the several coaling stations June 30, 1908	$14,636.47	
Outstanding accounts covering coal issued to various branches of the government, bills for which have been rendered but not paid June 30, 1908	21,137.06	
Total	35,773.53	
Less:		
Overdraft from coal supply fund	$956.88	
Outstanding bills	475.78	
Total	1,432.66	
Worth June 30, 1908	34,340.87	
Gain in value		16.72
Balance in favor of coaling stations June 30, 1908		34,340.87

In view of the fact that it will be necessary during the coming year to make repairs to buildings and equipment at several of the stations, and in some instances to erect additional sheds, it is intended to uniformly increase the surcharge to the maximum rate of 15 per cent for a sufficient length of time to accumulate a surplus to cover the repairs and improvements required.

In addition to the coaling stations now maintained it is purposed to establish one at Bongao and one at Balabac, in order that coal may be available for use of customs cutters stationed in the waters adjacent to those ports. The customs cutter on duty in the vicinity of Bongao has heretofore been compelled to go either to Sandakan or Jolo for its supply of coal, while the nearest point at which the cutter stationed at Balabac could obtain fuel was Puerto Princesa. These trips not only involved considerable expense in going and coming, but took the vessels away from the localities where they were most needed.

LEGISLATION ENACTED.

ACTS OF THE PHILIPPINE LEGISLATURE AFFECTING THE CUSTOMS SERVICE DURING THE FISCAL YEAR 1908.

"No. 1684.—An act prohibiting the importation by private persons of silkworms, their eggs or cocoons. (Enacted August 14, 1907.)"

This act is expressly made enforceable by the insular collector of customs.

"No. 1737.—An act to amend section one of Act Numbered Fourteen hundred and eleven, entitled 'An Act for the purpose of maintaining the parity of the Philippine currency in accordance with the provisions of sections one and six of the act of Congress approved March second, nineteen hundred and three, by prohibiting the exportation from the Philippine Islands of Philippine silver coins, and for other purposes,' by providing that the prohibition therein contained shall not apply to sums of twenty-five pesos or less of the new coins authorized by Act Numbered Fifteen hundred and sixty-four and carried by passengers leaving the Philippine Islands. (Enacted October 2, 1907.)"

This act prohibits all exportation of the first series of Philippine silver coins and the exportation (except in sums of less than ₱25 in the personal baggage of emigrants) of any of the later series.

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"No. 1751.—An act to provide for the arrest and return to ship of seamen deserting from certain merchant vessels in the Philippine Islands; for the adjudication by consuls of certain disputes and for the enforcement of consular decisions in such cases; and for repealing Act Numbered Fourteen hundred and thirty-nine. (Enacted October 7, 1907.)"

This act provides for the cooperation of the various other branches of the government in the consular work imposed upon this office by section 84 of the act of Congress of July 1, 1902. Under it the collector of customs, acting as American consul, is given a free hand to adjudicate all the minor disputes which arise at sea or within the port upon American vessels. In view of the peculiar wording of Act No. 400, restricting the jurisdiction of the courts of first instance to crimes committed upon vessels of Philippine documentation, referred to in the last annual report, this act is necessary in order to prevent the escape of offenders in certain cases.

"No. 1760.—An act to prevent the introduction into the Philippine Islands of dangerous communicable animal diseases, to prevent the spread of such diseases within the islands, and for other purposes. (Enacted October 10, 1907.)"

The bureau of customs assists in the enforcement of this act in so far as it relates to importations.

"No. 1761.—An act gradually to restrict and regulate the sale and use of opium pending the ultimate prohibition of the importation of opium into the Philippine Islands in whatever form except for medicinal purposes as provided by the act of Congress approved March third, nineteen hundred and five, and prohibiting any person from having the possession of opium, cocaine, or alpha or beta eucaine in any of their several forms, or any derivitive or preparation of any of such drugs or substances, except for medicinal purposes, and to repeal Act Numbered Fourteen hundred and sixty-one, and for other purposes. (Enacted October 10, 1907.)"

This is the current opium act and imposes upon the bureau of customs great responsibility to prevent the smuggling of this drug.

"No. 1775.—An act authorizing the insular collector of customs to clear foreign vessels for the ports of Legaspi and Tabaco. (Enacted October 11, 1907.)"

This act expressly permits the clearance of vessels not registered for the coastwise trade to the ports of Legaspi and Tabaco, a right which is already given for all ports by section 110 of the customs administrative act. It will be noted that nothing in this act permits the landing of foreign cargo at a coastwise port not a port of entry, and inasmuch as the ports of Tabaco and Legaspi are naturally both shipping ports prominent in the hemp trade it is not clear what advantage this act has been to them.

"No. 1777.—An act authorizing the Governor-General to close, by executive order, certain ports of entry, and to reopen the same ports in like manner when the public interests so require. (Enacted October 11, 1907.)"

This act permits of the closing of the small ports at the southern frontier of the archipelago. Under it the ports of Bongao, Sitanki, and Jurata were actually closed at the end of the fiscal year 1908.

"No. 1780.—An act to regulate the importation, acquisition, possession, use, and transfer of firearms, and to prohibit the possession of the same except in compliance with the provisions of this act. (Enacted October 12, 1907.)"

This act, so far as it relates to the importation of firearms, is a complement to subparagraph 1 of section 6 of the tariff-revision law of 1905.

"No. 1781.—An act to amend section twenty-seven of Act Numbered Three hundred and fifty-five, entitled 'An act to constitute the customs service of the Philippine Archipelago and to provide for the administration thereof,' as amended, by providing for the remission of duties on importations of the value of less than one dollar. (Enacted October 12, 1907.)"

This act restores section 27 of the administrative act to the condition in which it was prior to its modification by Act No. 1235, and makes dutiable all goods valued at more than $1, United States currency, instead of goods on which the duties are more than $1, United States currency.

"No. 1782.—An act to provide for the establishment of manufacturing bonded warehouses. (Enacted October 12, 1907.)"

This act is commented upon in remarks concerning the port of Manila.

"No. 1806.—An act to amend Act Numbered Three hundred and fifty-five, entitled 'An act to constitute the customs service of the Philippine Archipelago

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and to provide for the administration thereof,' as amended, by providing that merchandise in bond may be withdrawn for delivery on board vessels of the United States and foreign vessels. (Enacted January 30, 1908.)"

This act is substantially to the effect that lading goods from a bonded warehouse on board a foreign vessel for consumption shall be deemed the equivalent of exportation.

"No. 1814.—An act to amend section one hundred and thirty-six of Act Numbered Three hundred and fifty-five, known as the Philippine customs administrative act, as amended by Act Numbered Thirteen hundred and forty-one, and authorizing the insular collector of customs, with the approval of the secretary of finance and justice, to regulate the manifesting of coastwise cargoes in certain particulars. (Enacted March 24, 1908.)"

This act was passed to obviate the inconvenience caused coasting vessels by being compelled to file complete manifests prior to departure. Both passengers and cargo are received on board coastwise vessels up to the last moment, and by virtue of this law it is possible for the master to file a manifest in general terms prior to departure and detailed manifests afterwards.

"No. 1823.—An act creating the entry port of Davao. (Enacted May 15, 1908.)"

This act recognizes the great importance of the Davao district and provides the southern frontier of the archipelago with four ports, Balabac, Jolo, Zamboanga, and Davao, about equally distant from each other and so placed as to permit of as efficient a patrol of the coast as circumstances allow.

"No. 1837.—An act making appropriations for certain public works and permanent improvement, and for other purposes. (Enacted May 29, 1908.)"

This act contains one provision couched in this language:

"For the construction of a building for the customs and arrastre system in the capital of Cebu, two hundred thousand pesos."

Under authority of this act it will be possible to provide the customs service at the port of Cebu with a much-needed building, and to install a suitable plant for the handling of imported and exported merchandise thereat.

"No. 1844.—An act to amend section three hundred and one of Act Numbered Three hundred and fifty-five of the Philippine Commission, known as 'An act to constitute the customs service of the Philippine Archipelago and to provide for the administration thereof,' as amended, in such manner as to prohibit the importation of merchandise into any port in the Philippine Islands other than an entry port, or in vessels of less than thirty tons burden. (Enacted June 1, 1908.)"

This act is referred to under the heading "Revenue-cutter service."

LEGISLATION PROPOSED.

SHIPPING COMMISSIONER.

During the year at the request of shipping interests, this office drafted a bill providing for a shipping commissioner whose duty it should be to keep a register of seamen and to superintend their shipping on and discharge from insular vessels. The need of such a law is threefold. First, in order to protect the shipowners against the sharp practices of embarcadores, or unofficial shipping agents, who receive a fee each time a man is shipped, and are therefore interested in having shipments short and numerous. Each desertion means an additional fee for some embarcador. Shipowners are entitled to an assurance of the faithful keeping of contracts by the sailors they employ. There is now no penalty for desertion, and no certainty that habitual criminals will not form a part or even the majority of crews picked up in the present casual manner. Second, the seamen themselves need protection. These have always been treated as a class needing the especial protection of the laws. Complaints of nonpayment of wages are frequently made to this office, but no law permits intervention. Cruelty and sometimes great injustice to a skillful, deserving, and hardworking part of the population would be largely prevented by the passage of this act. Third, the public also have an interest in seeing that the ships upon which they or their goods are to be transported are manned by men who make a business of following the sea, and not by persons without either experience or aptitude for the calling, or habitual criminals fleeing from justice or seeking opportunities for the commission of new crimes.

The system proposed was to be self-supporting out of fees charged both ships and seamen, and was passed by one of the two houses of the Legislature, but was postponed by the other to the following year.

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In order to establish a just and equitable method of shipping and discharging officers and sailors in the coasting trade and to rectify abuses which have been the outgrowth of a system over which the government exercised no control, it is recommended that this bill or one of the same purport be adopted.

CUSTOMS ADMINISTRATIVE ACT.

Experience has shown a number of weaknesses in the customs administrative act. During the fiscal year 66 condemnation cases have been handled by this office, an increase of 15 over the preceding year. These cases are the most troublesome to be dealt with. The amount involved is frequently small, and the cases are rarely contested. The procedure outlined by the administrative act, as amended by Act No. 864, is complex, unpractical, and compels an amount of work on the part of this bureau which is not balanced by any good to the public in general or to the claimant of the goods in particular.

The matter of fees, under sections 284 and 392, is in a particularly unsatisfactory condition, and while some papers are taxed at an unduly high rate, others, which might well pay, escape altogether. The system of double taxation, by which certain papers must bear both customs and internal-revenue stamps, is unnecessarily annoying, and the entire subject-matter of these two paragraphs needs to be clarified and simplified. Numerous other changes in respect to detail should be made, and it is suggested that this act be redrafted and reenacted as a whole.

GENERAL REGULATIONS.

The following circulars and orders contain the more important general regulations promulgated by this office during the year:

"Customs Administrative Circular No. 436 provides regulations for the government of vessels in all harbors throughout the Philippine Islands, and fixes the boundaries of harbors at ports of entry.

"No. 454 of the same series promulgates instructions regarding disbursements, as provided by Act No. 1792 and Auditor's Circular No. 43, for the ports of Manila, Iloilo, Cebu, Balabac, and Aparri.

"No. 458 promulgates regulations concerning firearms, as required by Act No. 1780.

"No. 464 prescribes regulations as to the number of licensed officers to be carried on vessels operating in the coastwise trade.

"No. 492 publishes Act No. 1814, and prescribes regulations for the clearance of coastwise vessels in accordance therewith.

"No. 494 prescribes regulations concerning the consecutive numbering of packages of imported merchandise.

"No. 497 prescribes regulations to be observed in connection with the free admission of supplies imported for the government.

"No. 498 prescribes the conditions of free entry of metal receptacles under bond for exportation as containers of Philippine products.

"No. 506 publishes section 2844 of the Revised Statutes of the United States, as amended by act of Congress June 28, 1906, and prescribes regulations in accordance therewith for the certification of invoices describing Philippine products shipped to that country.

"No. 514 prescribes that all statistical reports shall be prepared at the port of Manila.

"No. 515 publishes instructions and regulations for the maintenance and operation of government coaling stations.

"No. 516 prescribes regulations governing the expenditure of funds to meet the expenses of the customs service at subports of entry.

"Manila Custom-house General Order No. 13 prescribes the method for presentation of protests and appeals at the port of Manila, and the treatment thereof.

"Manila Custom-house Special Order No. 286 prescribes general regulations for the internal administration of the customs service at the port of Manila."

CUSTOMS MARINE CIRCULARS.

On April 15, 1908, a new file of "customs marine circulars" was established for the purpose of containing all decisions and new regulations of the insular collector of customs relating to ships and seamen, including admeasurement,

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inspection, transfer, incumbrance, license, and registration of vessels, qualifications of marine officers, shipment of officers and seamen upon Philippine and American vessels, pilots and pilot fees, and like subjects.

"Customs Marine Circular No. 2 defined the term 'home port' and prescribed that a vessel's registry of title must be kept at her home port in order to facilitate inquiries in regard to such titles.

"Circular No. 3 of the same series passed upon the right of the board on Philippine Islands marine examination to revoke the license of an officer issued by a former board in good faith but through obvious error of law or fact. It was held in this ruling that in the absence of 'misconduct, intemperate habits, incapacity, inattention to duty,' or fraud in the procuring thereof such licenses could not be revoked by the board or the insular collector.

"No. 4 published a résumé of an opinion rendered by the honorable the attorney-general upon the subject of the rights of foreign-built vessels owned by citizens to engage in the general coastwise trade, and also in pearl fisheries in the Moro Province.

"No. 5 published Act No. 1844 of the Philippine Legislature prohibiting importations in vessels of less than 30 tons burden.

"No. 6 published the act of Congress of April 29, 1908, indefinitely postponing the application of the American coastwise laws to the trade between these islands and the mainland territory.

"No. 7 published the international rules to prevent the collision of ships at sea and ruled that all the local vessels were bound thereby whether in port or at sea as well as foreign ships when within jurisdictional waters."

ORGANIZATION.

During the last year inquiries have been received from the legislative department and other sources as to the different duties assigned to this bureau and the manner in which they are performed. Therefore, to furnish this information in form for reference, advantage is taken of this opportunity to outline the several functions of the bureau, under existing laws, and to give a short description of the organization employed in their performance. The chief function of the bureau of customs is of course the collection throughout the islands of the customs revenue, but for the sake of economy, and in accordance with their fitness, numerous other duties were assigned to the bureau at the time of its organization and since that render its title somewhat misleading. In fact, 44 per cent of the entire expenditure for the maintenance of the bureau arises from the performance of duties which have little or no connection with the collection of the revenue and which in the United States and elsewhere are performed by separate branches of the Government.

As shown under the heading "Cost of collection," $314,376.14 were expended in collecting the revenue (that is to say, in the payment of all legitimate expenses chargeable to customs proper), while $137,341.99 were disbursed in connection with other functions, some of which are more or less associated with the customs service, but generally distinct therefrom.

The other duties performed, however, are of great importance to the public and essential to the orderly conduct of the business affected. Some of the services thus rendered are self-sustaining, while others make no returns except in their value to the public through the protection they afford to life, property, and rights.

Aside from the collection of the revenue, the functions of the bureau are as follows: The documenting of vessels; the admeasurement of vessels; the recording of all sales of, and documents relating to, domestic vessels, and of all vessels built in the islands; the inspection of vessels, their hulls, boilers, rigging, and life-saving apparatus; the regulation of the carriage of passengers by water, and the licensing of vessels therefor; the observance, signaling, and reporting the arrival of vessels and the approach of storms; the examination and licensing of marine officers; the shipment, discharge, and protection of merchant seamen, and the performance of other quasi consular duties; the maintenance of the laws and treaties concerning commercial intercourse; the execution of the laws relating to immigration and exclusion; the enforcement of the navigation laws, and the policing of coasts and harbors; the supervision of harbor fisheries; the administration of the revenue-cutter service; the prevention of frauds upon the revenue; the physical enforcement of the pure food and drug law; the distribution of property and supplies for the entire service; the maintenance and administration of government coaling stations throughout the

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islands; the supervision over all pilots and pilot associations; the compilation of the returns of commerce, navigation, and immigration of the islands, and the physical handling of all foreign merchandise passing through the customs warehouses or over the customs wharves at the port of Manila.

In order to promptly discharge these functions, as well as those relating to the collection of the revenue at the port of Manila, where 80 per cent of the business of the bureau is transacted, the regular work involved is divided between general divisions, called "staff assignments," fixed by internal regulations, of which the following is an extract:

"PARAGRAPH I. * * * The following regulations shall govern in the conduct of business by the bureau of customs at the port of Manila.

"PAR. II. The official staff of the insular collector of customs shall be composed of the following officers:

"1. Insular deputy collector of customs;
"2. Insular surveyor of customs;
"3. Insular special deputy collector of customs;
"4. Chief clerk.

"PAR. III. The subdivisions, officers, and employees, under each staff officer shall compose and be known as 'staff assignments.'

* * * * * * *

"PAR. V. The immediate supervision of administrative subdivisions and functions shall be distributed as follows:

"Insular collector of customs:
"1. Cashier's division;
"2. Board of protests and appeals;
"3. Board on Philippine marine examinations;
"4. Special agents;
"5. Customs secret service;
"6. Revenue-cutter service;
"7. Coast district inspectors of customs.

"Insular deputy collector of customs:
"1. Marine division;
"2. Appraisers' division;
"3. Liquidation division;
"4. Immediate supervision of the classification of merchandise and assessment of duties.

"Insular surveyor of customs:
"1. Inspectors' division;
"2. Passenger and baggage division;
"3. Hull and boiler section;
"4. Marine admeasurements;
"5. Arrastre plant;
"6. Supervision of harbor fisheries;
"7. Semaphore service; Pilots' Association, and other duties pertaining to the office of the captain of the port.

"Insular special deputy collector of customs:
"1. Immigration division;
"2. Marine license division;
"3. Enforcement of navigation laws;
"4. Quasi-consular duties of the collector of customs except the certification of consular invoices;
"5. Special duties of a legal nature.

"Chief clerk:
"1. Correspondence and record section;
"2. Statistical division;
"3. Accounting section;
"4. Property section;
"5. Harbor launch division."

* * * * * * *

These "staff assignments," as may be seen from the foregoing extract, are subdivided into divisions and sections which perform the routine duties assigned to them, under the immediate supervision of their chiefs and the respective staff officers to whose assignment they are attached.

The following distribution of duties results from this organization:

OFFICE OF THE INSULAR COLLECTOR OF CUSTOMS.

The insular collector of customs exercises general supervision and control over the entire service throughout the islands; promulgates general rules and

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regulations for the government of its branches; decides all protests and appeals relating to customs and immigration; settles all questions submitted by staff officers or arising between "staff assignments;" acts upon all matters requiring administrative treatment outside of the usual routine, and generally performs the duties prescribed by chapter 2 of the customs administrative act.

In the general work of his office he is assisted by one clerk of class 6 (translator) and one stenographer of class 7.

On account of the particular nature of their duties, the following subdivisions and officers are not attached to staff assignments, but report immediately to the insular collector:

CASHIER'S DIVISION.

The duties of the customs cashier involve the receiving of all dues and charges collectible by the bureau, including guaranty deposits, customs, and other revenues, proceeds from sales of coal at the several coaling stations, amounts due for extra services of customs employees, salaries of bonded storekeepers, and the accounting therefor. He is the custodian for the entire service of customs and official fee stamps, sells and issues the same, requires accounting, and accounts therefor. He disburses all funds for the maintenance of the service, keeps the records of the personnel of the entire bureau, does the preliminary and final work in connection with all leaves of absence, and prepares the civil-service reports required with reference thereto. During the past year the customs cashier has handled, in and out, $7,746,492.61, without loss of a dollar, and accurately accounted therefor. As may be seen by this enumeration of duties, the work of the cashier's office, including the keeping of the records attendant upon its various transactions, is considerable, and although the work of that office has been materially increased during the past year by the addition of the disbursing work formerly done by the accounting section it has been possible, through rearrangement of the duties, to reduce the personnel. There are employed in this office at present 4 American and 12 Filipino clerks, and 2 messengers, with annual salaries, including that of the cashier, amounting to $14,140. Of this amount $11,560 is paid from the customs appropriation and $3,080 from arrastre funds on account of transactions effected therefor.

BOARD OF PROTESTS AND APPEALS.

The board of protests and appeals consists of the insular deputy collector of customs, president; the insular special deputy collector of customs; chief clerk, Manila custom-house; chief of the marine division; chief of the liquidation division; the special agent; and the secretary of said board.

The functions of the board are analagous to those of the Board of General Appraisers in the United States, except that its findings are advisory only, and are forwarded to the insular collector in the form of recommendations. The board meets regularly each week, and oftener when necessary to promptly transact its business. It is provided with an office in which all records pertaining to protests and miscellaneous cases received, acted upon, and appealed to the courts are kept by a secretary, who is assisted in his work by 1 American and 3 Filipino clerks. The secretary of this board, in addition to his duties in connection with the handling of protests and appeals, is the custodian of all bonds filed with the bureau in customs transactions. He prepares the necessary papers in seizure and condemnation cases, and keeps all records pertaining thereto, as well as those involved in the licensing of customs brokers. The volume of business transacted by this office during the past year has been such as to require outside help, to prevent falling behind with matters requiring regular attention.

The number of protests and appeals that were investigated and acted upon by the board, recommendation having been written in each case, is shown by the tables under the heading "Board of protests and appeals." The regulations governing the operations of the board of protests and appeals and prescribing the duties of its secretary are contained in Manila Custom-house General Order No. 137, and Manila Custom-house Special Order No. 265.

BOARD ON PHILIPPINE MARINE EXAMINATIONS.

The board on Philippine marine examinations conducts the examinations which form the basis of all licenses issued by this office to marine officers, except those granted to officers exempt from examination by specific provision

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of law, and maintains a complete record of all marine officers to whom licenses have been granted. The personnel and volume of work performed by this board is heretofore shown under its appropriate heading.

SPECIAL AGENTS.

Formerly there existed in this bureau a division of special agents, consisting of a chief and 8 subordinates, but this was abolished during the fiscal year 1905. The necessity for so large a force is probably doubtful, but that the services performed by such officers are essential to the protection of the revenue and proper conduct of customs business can not be disputed. They are the means by which the chief of the bureau keeps in touch with the several branches of the service throughout the islands. They conduct special investigations with reference to fraudulent entries, examine the accounts of all customs officers, observe the procedure followed by the different offices, correct erroneous practices, and report irregularities discovered, which, if permitted to continue, would jeopardize the revenue or result in impositions upon the public. The proper performance of their duties tends to harmonize the work of the service, removes unnecessary obstacles to the prompt transaction of business, and prevents wrongdoing. Since March 1, 1908, the one special agent employed has been constantly engaged in inspection work, and in connection with special inquiries, conducted at the port of Manila, with a view to securing economy in administration and the elimination of unnecessary delay in the transaction of business and delivery of merchandise, with results that far more than compensate for the expense involved. The employment of two such agents, one for constant service at Manila and the other for general work at subports, would be of great advantage and prove an economy to the service.

CUSTOMS SECRET SERVICE.

The personnel of this service is naturally not fixed, but limited by the appropriation, which is expended by the collector as may seem necessary for the protection of the revenue and the enforcement of the laws with the administration of which the bureau is charged. That this service has been active during the past year is shown by the fact that its members have caused the arrest of 186 persons for violations of the law at the port of Manila, besides making numerous seizures of lottery tickets, opium, morphine, tobacco, and miscellaneous merchandise irregularly imported or held. Through its efforts, broaching of cargo in the bay has been effectually stopped and thefts upon the wharf and in the warehouses are rarely reported.

The chief of secret service, in addition to his other duties, is custodian of the customs-office buildings and exercise police control over the entire premises, including the detention station for immigrants.

REVENUE-CUTTER SERVICE.

The personnel of the revenue-cutter service consists of 3 captains, 3 mates, 3 engineers, 3 assistant engineers, 6 quartermasters, 3 stewards, 9 firemen, and 12 sailors, equally distributed among the 3 cutters in commission. These vessels are operated upon sailing orders of the insular collector and assigned as the service requires. Their condition, expense, and the work they are capable of is elsewhere discussed in this report.

COAST DISTRICT INSPECTORS.

Of this class of officials there were at one time 22 employed in different parts of the archipelago, but the force has been practically abolished, only one regular inspector remaining, with station at Aparri, the coastwise shipping port of the Cagayan Valley.

During the year this inspector has visited officially the various ports upon Luzon, except Manila, northern coast of Masbate, Mindoro, and those of Ticao, Burias, Maricaban, and Catanduanes, inspecting and securing the renewal of licenses of over 100 vessels of more than 15 tons burden.

One Manila harbor inspector is also assigned as acting coast district inspector to the Jolo collection district for the purpose of patroling the southern waters in the vicinity of Borneo with the customs cutter *Skua*.

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STAFF ASSIGNMENT OF THE INSULAR DEPUTY COLLECTOR OF CUSTOMS.

The insular deputy collector of customs, in the absence of the chief of the bureau, acts as collector, and, during his presence, is the executive officer charged with immediate supervision over the entry, classification, appraisal of, and liquidation of the duties upon imported and exported merchandise. His duties in this latter connection are more particularly indicated by the functions of his staff assignment, as follows:

Appraisers' division.—The duties pertaining to the appraisers' division consist chiefly of the examination, appraisal, and classification of all merchandise which is liable to customs duties upon importation or exportation, under the tariff-revision law of 1905.

The work is performed by an organization composed as follows: The appraiser and assistant appraiser of the port, 4 assistant appraisers in charge, respectively, of the subdivision of textiles, machinery, provisions and alimentary substances, and miscellaneous goods. Under the immediate supervision of the assistant appraisers there are assigned 5 first-class, 5 second-class, 8 third-class, 10 fourth-class, 2 Class D, and 2 Class E examiners, of which 1 third-class examiner is detailed at the Manila post-office to handle the mail-package entries, and 1 fourth-class examiner in charge of the records. In addition to the above there are 13 Filipinos employed as weighers and 10 Filipino record and invoice clerks and messengers.

There were coursed through the appraisers' division during the fiscal year 1908 entries of the various classes provided for in the regulations, as follows:

Consumption	20,368
Warehouse	1,587
Parcel:	
Consumption	1,154
Informal	1,706
Mail (informal)	4,619
Free (of all kinds)	3,342
Total	32,776

The positions of assistant appraisers have been filled from the ranks of the subordinate examiners, who have had from seven to nine years' training and experience in the appraisers' division, which in itself is a guaranty that appointees are efficient, practical men, familiar with classifications, and fully posted as to the value of merchandise in the world's markets.

Few of the employees of the appraisers' division entered the service with a technical knowledge of the classes of merchandise brought into the Philippine Islands, and at least two years' service, with earnest and persistent application to the duties pertaining to their positions, is necessary to develop capable and efficient examiners.

Touching briefly on the duties of appraisers and examiners, it may be of interest to state that in all instances where it appears that the invoice figures of any consignment of merchandise are below the true market value in the country from whence imported, or when the documents filed with the entry covering such merchandise are defective, these officers are required to determine the value at which the consignment shall be returned for duty.

In such cases examination of the files of consular invoices may be made, for record of former importations of identical goods, or the appraisal may be based on the appraiser's knowledge of the cost of raw components entering into the manufacture, cost of production, agent's or dealer's profits, and packing charges. This general information can only be gained by studious effort on the part of the appraiser, and the ability to correctly appraise merchandise in such cases is an indispensable qualification to the proper safeguarding of the customs revenue.

Protests filed by importers against classifications, weight, or value of goods as determined by examination, are sent to the appraisers' division for report. These protests usually pertain to the construction or interpretation of the tariff law or customs administrative act, but in many instances they are based on technical grounds, involving composition of the articles, particularly those of composite manufacture. It is the duty, in such cases, of the assistant appraiser, responsible for the return of the entry involved in the protest to examine the trade journals or other authorities in order to determine the justness of the assessment or the legality of the importer's claim.

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Where requisite information is not obtainable from the documents filed with entries, and no record of former importations is available, or if the materials of any imported articles of composite manufacture are of such a nature that the component of chief value is a matter of conjecture, samples of such merchandise are transmitted to the bureau of science for analysis. The corresponding report submitted by the chemical laboratory of that bureau is permanently filed in the appraisers' division. These reports are frequently of material value in determining the proper classification of imported products.

When the nature of imported merchandise permits retention for filing, samples are attached by examiners to the prescribed cards and referred with the corresponding entries to the assistant appraisers.

In addition to filing samples in the above-described manner, registers are maintained in each subdivision which insure a standard reference for goods of which it is found impracticable to preserve samples, such as liquors, beers, mineral waters, and liqueurs.

Parcel department.—During the fiscal year 15,302 packages were received in the parcel department, arriving as follows: By mail, 8,448; by transport, 188; as manifested cargo and ship's stores, 6,666. These packages were cleared on 1,706 informal entries, 1,154 parcel entries (including 168 consolidated entries), and 2,506 consumption entries.

It is estimated that duties amounting to $75,000 were collected on all entries dispatched through the parcel department.

For the convenience of the public, and in order to expedite the delivery of mail packages, a customs examiner is permanently stationed at the Manila post-office. Prior to October 12, 1907, collectors of customs were authorized to remit duties which were less than $1, United States currency; on that date Act No. 1781, imposing duties on all merchandise exceeding in value $1, United States currency, became effective, and the result is a material increase in collections from this source.

Unsealed packages arriving by foreign mail, the contents of which are liable to customs duties, and which are addressed to persons outside of Manila, are inspected by the customs examiner at the Manila post-office, with the assistance of extra examiners from the appraisers' division when necessary.

The food and drugs act.—Under the provisions of this act (No. 1655) 601 samples of commodities designated by the director of health have been forwarded by the appraisers' office to the bureau of science for analysis. These samples were procured from an equal number of consignments and represent various classes of imported products, as follows:

Bacon	12	Milk and cream	36
Butter	44	Meat	33
Coloring (for confectionery, etc)	9	Pickles	11
Cheese	42	Sausage	30
Drinks	15	Soups	4
Extracts, flavoring	38	Sauces, table	20
Fruit juices and sirups	21	Sirup and honey	6
Fruit, preserved	33	Vegetables, preserved	88
Fish	49	Drugs	57
Ham	36		
Jam	7	Total	601
Lard	10		

Of the above, 170 specimens were found to be misbranded and delivery of the merchandise were suspended until correct descriptive labels were affixed; 82 were found to be adulterated to such an extent as to be unfit for consumption and were rejected; the balance, 349 were found to contain no objectionable ingredients. The greater percentage of the products found to be adulterated or misbranded was imported during the early months of the enforcement of this act and before the manufacturers and dealers were thoroughly familiar with the provisions of the food and drugs law. At present a large proportion of the importations are properly labeled and preserved, where preservatives are essential, without harmful ingredients.

The enforcement of the food and drugs act, in so far as it applies to imported food products and drugs, has to a large extent been imposed on the appraisers' division, with gratifying results.

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Marine division.—During the fiscal year the entrance and clearance of 615 foreign vessels were certified and the corresponding cargo and passenger manifests, crew and store lists, and other requisite papers examined and verified in the marine division, in which 6 American and 19 Filipino clerks are employed.

It is the duty of the employees of this division to check importations for which entries are presented, from the manifests of the carrying vessels, verify the entries for merchandise placed in bond and cleared from bonded warehouses, examine and affix fee stamps to consular invoices describing exportations of Philippine and other products destined for the United States and foreign countries, prepare vouchers for the refund of import duties paid on coal used on vessels engaged in the interisland and foreign trade, certify to the correctness of bonds presented to insure the subsequent production of bills of lading and consular invoices when these documents are not available upon arrival of the corresponding merchandise, estimate duties on importations and exportations in order that deposit thereof may be made and the merchandise examined or laden without unnecessary delay, and make proper record of abandoned and unclaimed merchandise, showing final disposition thereof.

The marine division is also charged with the issuance of permits, including delivery, discharge, lading, or transfer of merchandise, and the subsequent verification of the same from the reports of inspectors, examiners, storekeepers, and guards. The following list shows the number of each class of permits issued during the fiscal year 1908:

For lading	855
For discharging	217
For transfer of coal	1,016
For overtime work	1,496
Miscellaneous, ship-side, separate transportation, transit cargo, short shipments, etc	3,379
For ship-side delivery of government supplies	274
For customs warehouse delivery of government supplies	1,576
For delivery of unexamined packages	23,710
For examination of designated packages	23,710
For bonded-warehouse examination	1,460
For bonded-warehouse delivery	5,745
For bonded-warehouse exportation	143
For bonded-warehouse transportation	5
Total	63,586

The number of entries handled in this division and their designations was as follows:

Consumption	20,368
Free	3,342
Warehouse	1,587
Warehouse withdrawals:	
For consumption	3,689
For export	124
For transportation	5
Government free	3,207
Railroad free	217
Export	4,573
Coal refund	997
Drawback	33
Total	38,142

The average number of warehouse entries filed per month during 1908 was 132, as compared with 96 during the previous fiscal year.

From July 1, 1907, to June 30, 1908, the marine division certified the entrance and clearance of 2,364 vessels engaged in the interisland trade.

As may be gathered from the above, the initial work in connection with customs treatment of imported and exported commodities is performed in the marine division, and their final disposition is also shown by its records.

Liquidation division.—On this division falls the important duty of liquidating and examining, for the purpose of detecting and rectifying errors, all entries

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for imported or exported merchandise, together with other minor, but for the protection of the revenue, none the less necessary, functions, which will be explained in the order of their relative value to the service. Seven Filipino and 4 American clerks are engaged in this work.

Liquidators are required to be thoroughly familiar with the classification of merchandise, in order that errors of examiners may be detected. It is also their duty to closely scrutinize invoices, compare valuations shown thereon with values declared in importers' entries, reduce the foreign currency of invoices to the corresponding values in United States currency, in short to finally liquidate and indicate on entries the exact amount due the Philippine government on each importation or exportation.

The liquidators are also charged with the preparation of fine vouchers for penalties that collectors of customs are authorized to impose, when merchandise is so declared and entered that the duties, if estimated on the face of entries, would be less by 10 per cent than by law should be collected, also with the verification of entries covering the drawback of customs duties paid on imported materials used in the manufacture of articles exported from the Philippine Islands, as authorized by act of Congress of March 3, 1905.

Entries for merchandise transferred to bonded warehouses and subsequently withdrawn for consumption and export entries for Philippine or other products are verified and prepared by the liquidators for final adjustment. Statements of refunds incident to short shipments of inward and outward cargo, refunds on account of protests that are sustained by the insular collector of customs after consideration by and recommendation of the board of protests and appeals, the checking and comparison with the corresponding entries of delayed consular invoices, are among the numerous other duties performed by the clerical force of the liquidation division.

The total number of entries of all classes verified and liquidated during the fiscal year 1908 is shown by the records to be 35,644, a daily average of 119. The number of entries subject to penalties in the discretion of the insular collector of customs, necessitating the preparation by the liquidator of a notice of fine in each case, during the same period, was 1,838.

STAFF ASSIGNMENT OF THE INSULAR SURVEYOR OF CUSTOMS.

The insular surveyor of customs is in immediate charge of the outdoor work of the bureau at the port of Manila, and advises concerning that at other ports. He assists the insular collector in all work pertaining to the several functions indicated by the duties of his staff assignment, and otherwise as required.

The duties of the staff assignment of the insular surveyor embrace those performed by the admeasurers' section, hull and boiler section, semaphore section, passenger and baggage division, and inspectors' division, all of which are provided for in the general appropriation acts, as well as the arrastre plant, a self-supporting organization maintained in accordance with the provisions of Act No. 897 (heretofore discussed under its appropriate heading); the board on marine accidents, and supervision over the operations of the Pilots' Association, and Manila Harbor fisheries.

Changes in the staff assignment of the insular surveyor of customs during the year have resulted in the discontinuance of the office of the deputy surveyor of customs, the duties of which have been distributed and are now performed by other employees, and the abolishment of the harbor master's office, the functions of which are now attended to by a berthing officer, and two bay and river guards, who have been assigned to duty under the immediate direction of the insular surveyor.

Admeasurer's section.—During the year the official admeasurer ascertained the tonnage of 141 vessels, for which fees collected amounted to $718.80. Upon the information thus obtained was based the amount of tonnage dues collected from the corresponding vessels. Admeasurement free of charge was also made, upon special request of the owners, of 82 craft of less than 15 tons gross burden, under the provision of Act No. 1354, as well as of 4 government vessels. The admeasurer's section, with a personnel consisting of 1 admeasurer and 3 clerks, was abolished by Manila custom-house general order No. 142, of date April 10, 1908, and the duties thereof are now performed by 1 official admeasurer under the immediate direction of the insular surveyor of customs.

Hull and boiler section.—The operations of this subdivision during the year embraced inspections of, and decisions upon, the condition and seaworthiness

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of 289 vessels at the ports of Manila, Cebu, Iloilo, Zamboanga, Davao, Sorsogon, Legaspi, and Gubat, and resulted in the issuance of 175 certificates of good condition. Such documents were denied to 73 vessels pending the completion of repairs, and 9 were condemned, 32 being out of commission and undergoing alterations or repairs.

In the performance of their work, the hull and boiler inspectors are required to make a thorough examination of the hull, boilers, machinery, and equipment of steam vessels, and the hulls, sails, rigging, and equipment of sailing vessels, including the inspection of life-saving and other safety appliances, and pass upon their safety and serviceableness. This work calls for not only a technical knowledge of marine architecture, engines, and machinery, but upon the thoroughness and intelligence with which it is performed often depends the safety of lives and valuable property. The personnel authorized to perform service during 1908 consisted of one supervising inspector, two inspectors and one clerk, but the work was so increased during the latter part of the year that it became necessary to recommend the employment of an additional inspector, which was approved under the appropriation act for 1909.

Semaphore section.—The semaphore service is maintained in a tower at No. 18 Calle Arzobispo, which commands sufficient view of Manila Bay to enable the official who is on watch from sunrise to sunset to sight incoming vessels several hours prior to their arrival at the breakwater, and thus give due notice to quarantine, customs, and other interested government officials, as well as to local shipping interests. It is estimated that an average of four hundred notices of arrival are furnished daily either in pursuance of fixed regulations or upon special request.

Furthermore, during bad weather, the station is in constant communication with the weather observatory, and promptly indicates changes during the day or night by means of certain signal forms or lights prescribed by official order. The value and importance of this service to all concerned can not be overestimated.

Passenger and baggage division.—The work of inspecting the baggage of passengers arriving at this port is assigned to a corps, consisting of 1 chief inspector and 5 assistants, which, during the year, boarded 357 incoming vessels for the purpose of obtaining passengers' declarations and taking charge of their luggage. This work involved contact with 20,718 passengers, the clearing of 5,267 pieces of baggage on shipboard, and of 26,333 pieces that were passed after landing. In addition to enforcing the customs laws with respect to baggage, the laws prohibiting the importation of opium and regulating the admission of firearms necessitates the most careful vigilance on the part of these officials, who, during the year, took up 624 weapons from their owners, under the firearms act, for disposition.

The duties yielded by dutiable effects found in baggage upon inspection during the year amounted to $13,745.07. In addition to this, a considerable quantity of merchandise was seized and confiscated on account of attempted frauds.

Inspectors' division.—This division exercises customs surveillance over arriving and departing vessels and their cargoes, and from the nature of its duties is one of the most important subdivisions in the service. Its work is performed under the direct supervision of a chief inspector, by 28 inspectors, 100 guards, and 14 other employees. They are required to check imported and exported merchandise, and coal for use on steam vessels (import duties upon which are refundable); supervise the loading of cargo for transshipment on coastwise vessels; enforce the laws regulating landing of firearms, ammunition, and live animals; take charge of the transfer of goods to bonded warehouses; and guard vessels at anchor in port. These duties during 1908 involved the following work:

	Packages.
Classification and delivery consignees at ship's side of	5,750,476
Delivery on pasé permits without discharging at the custom-house of	748,218
Delivery direct to bonded warehouses of	142,625
The discharging on the customs wharf of	1,022,977
And the transfer from foreign to coastwise vessels of	4,450
Total passed during the year	7,668,746

Of the 28 inspectors on duty in this division, there has been a daily average of 4 on sick or other leave, and 10 of the 100 guards absent for similar reasons.

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All of the inspectors and guards present were detailed for duty in the harbor with the exception of 38 guards designated for weighing exports and coal; checking cargoes and manifests; guard duty at Mariveles, on coastwise vessels, and in connection with the transfer of merchandise to the customs wharf and bonded warehouses.

Bonded warehouses.—Among the other duties assigned to the insular surveyor's staff is the control of bonded warehouses, of which there are 3 for public and 7 for private use, conducted under the direct charge of storekeepers, who are customs officials acting under the orders of the surveyor, but whose salaries, although received from the customs disbursing officer, are paid by the proprietors of the respective warehouses.

Harbor fisheries.—The control of harbor fisheries involves the enforcement of the existing regulations, with reference thereto, in the waters of the Manila district, and the issuance of permits to engage in this pursuit. During the past fiscal year 77 fishing weir licenses were issued, for which $975.12 were collected.

Board on marine accidents.—The board on marine accidents, appointed by Manila custom-house general order No. 199, of which the insular surveyor of customs is chairman, consists of one other customs official and two members of the Manila Pilots' Association, and was established for the purpose of inquiring into, fixing the responsibility for, and reporting on any accidents involving shipping that may occur, and require investigation at the port of Manila.

During the year 16 cases were brought before the board for investigation and decision. Most of these related to collisions between craft in the river and bay, and in each case exhaustive testimony of the witnesses and other interested parties, as well as that of experts, was taken and used as the basis of the board's report and findings, for submission to and review by the insular collector of customs. While the decisions of this board have no legal force, except in so far as they may affect the competency of officers to retain their marine licenses, they are frequently instrumental in the settlement of disputes where damages are involved, without recourse to legal action, and in that respect are much appreciated by shipping interests.

Pilots' association.—The work in connection with the control of the pilots' association, which is an otherwise independent and self-supporting organization, involves the regulation of their operations and the examination and audit of their monthly financial statements. The duties of the pilots' association have been considerably increased since the abolishment of the harbor master's office. The chief pilot, who is in immediate charge of the work of the association, has an office adjoining that of the insular surveyor and cooperates with him in the control of shipping.

The total collections of the association, on account of fees for piloting vessels during the fiscal year 1908, amounted to		$23,509.01
Expenses of maintaining the service		3,723.45
Net earnings accruing to the association		19,785.56
Dividends paid to 8 pilots July 1, 1907, to March 1, 1908	$12,246.44	
Dividends paid to 7 pilots April 1, 1908, to June 30, 1908	7,539.12	
Total dividend paid		19,785.56

Average monthly earning per pilot $217.31.

Number of entering vessels piloted	1,674
Number of departing vessels piloted	1,711
Number of vessels changing berth	508

STAFF ASSIGNMENT OF THE INSULAR SPECIAL DEPUTY COLLECTOR OF CUSTOMS.

The insular special deputy collector of customs is the law officer of the bureau of customs, to whom all matters involving the preparation of cases for trial in court on behalf of the bureau are referred, as well as other matters of

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a legal nature and those involving the consular functions of the insular collector of customs. In this work and in the supervision over the duties of his staff assignment, including the execution of the immigration, exclusion, and navigation laws and the licensing of vessels, he is assisted by 2 clerks.

Immigration division.—The organization by means of which the physical enforcement of the immigration and exclusion laws is effected consists of 1 chief inspector, 5 immigration inspectors, 1 Chinese interpreter, and 8 other employees. It is the duty of the immigration inspectors to board incoming and departing vessels, of which 642 were visited during the year, for the purpose of verifying passenger and crew lists. In this work an actual count was made during 1908 of 20,759 persons representing vessels' complements and 3,704 transit passengers. All persons arriving who are suspected of coming within the excluded classes are transferred to and held at the immigration detention station pending a thorough investigation as to their rights and for subsequent action in accordance with the findings of the immigration board. Of these cases 921 were acted upon during the year. There were also considered by this board 3,797 applications from Chinese for laborers' certificates entitling them to reenter the islands after departure therefrom, as well as 1,042 merchants' affidavits, filed by Chinese desiring to depart from the islands, for investigation and indorsement as to the prima facie right of such persons to return.

This division maintains a complete registry of all Chinese legally resident within the islands, under the provisions of Act No. 702, of which there were 53,543 at the close of the fiscal year. This record contains photographs and complete detailed descriptions of all such persons, constantly available for reference for identification and other purposes.

Marine license division.—The work involved in carrying out the provisions of section 73 of Act No. 355, requiring the insular collector of customs to make and record all documents relating to the admeasurement, documentation, enrollment, and licensing of vessels built or owned in the Philippine Islands, is performed by this division with a personnel consisting of 1 chief of divison and 4 clerks. During the year this division prepared and recorded 851 licenses for vessels of various classes, 392 certificates of protection, ownership, transfer of ownership, change of name, and of other nature, besides selling 102 roll books and other documents required by the public.

The division is also charged with the assignment of official numbers and signal letters to Philippine vessels, as well as the recording of all documents relating to mortgages, liens, and conveyances thereon.

There has been established in the division during the year, and is now maintained, a complete card record system affording detailed information concerning all vessels licensed under Philippine law, embracing names of owners and vessels, class and tonnage, home port, date of construction, etc.

The functions and volume of business performed by this division are further shown under the heading "Documentation of vessels."

STAFF ASSIGNMENT OF THE CHIEF CLERK.

The chief clerk, Manila custom-house, is charged with the direct supervision over customs correspondence, records, accounting, custody of property and supplies, compilation of commercial and other statistics, operation of coaling stations, maintenance of customs launches, and other miscellaneous minor responsibilities properly devolving upon his office. The immediate work pertaining to the above-mentioned functions is distributed as follows:

Correspondence and record section.—All official communications addressed to the bureau of customs are delivered to the chief clerk for proper record and distribution to the several customs officials for necessary consideration or action. This work during the past year involved the receipt, indexing and recording, and distribution of an average of 355 letters and indorsements, with their accompanying documents, per day, as well as the dispatch, after proper record, of a daily average of 800 pieces of outgoing mail matter. These duties were performed under the personal direction of the chief of the correspondence and record section with the assistance of 18 Filipino clerks and 4 messengers. It was also the duty of this section, during the year, to mimeograph and distribute 80,000 copies of circulars and orders issued by the insular collector of customs, as well as to make typewritten transcriptions of numerous official documents of which copies were required.

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The card record system in use, which is one of the most modern, comprehends the indexing of official documents according to subjects and names, on alphabetically filed general index and cross-index cards, which refer to brief cards, containing an epitomized history of each case and chronological record of the action taken therein, as well as to numbered envelopes in which are filed either the original documents or complete copies thereof. The existing records are covered by 8,595 route numbers, and 43,700 file numbers, under which approximately 140,000 documents were filed during the year.

Property section.—The work of acquiring all supplies and property for the entire bureau of customs, which is elsewhere referred to at length, the care and protection of that on hand, the filling of requisitions, issue and shipment, was performed by the property clerk and 3 assistants at an annual salary expense of $3,800.

Harbor launch division.—The maintenance and operation of the harbor launch division are under the direct charge of a launch foreman, who is held accountable for the proper up-keep and efficiency of launches and their complements. This service, which has been discussed under the appropriate general heading, embraces a personnel consisting of 9 first and second class patrones, 11 engineers and assistant engineers, 13 firemen, 22 sailors, and 5 other employees in addition to the foreman. The personnel authorized by the appropriation act for the fiscal year 1908 provided for $16,320 in salaries.

Accounting section.—The work of the accounting section, which has been referred to under the heading "Accounting system," has been performed during the year by 2 expert accountants at an expense for salaries of $3,600, which represents a saving from the corresponding expense heretofore involved of $1,520. The duties of this section embrace the maintenance of disbursement, revenue, and coaling stations and refund accounts.

Statistical division.—The statistical division collects, consolidates, and classifies data pertaining to all merchandise imported and exported through entry ports, receipts and expenditures; immigration movements, arrival, and departure of passengers; and the number of entrances, clearances, and tonnage of coastwise and foreign vessels for the entire bureau of customs. It prepares the final reports based thereon for the bureau of insular affairs, the insular government, and the general public. The amount of labor involved in extracting the enormous amount of detail upon which the required information is based from original customs documents, and its consolidation in the concrete form under the several classifications necessary to afford the information desired, can be appreciated only by one thoroughly familiar with the various stages of this work; for example, during the fiscal year 1908, the data covering imports and exports alone were distributed through some 37,000 entries, each entry containing from 10 to 100 or more items, each of which had to be extracted and entered under the different classifications.

An important innovation has been made during the year in the method of classification, that work having been done heretofore under groups in accordance with the general nature and composition of the commodities involved, such as "meat and meat products," "manufactures of leather," etc., following a schedule originally prescribed by the War Department. While the reports in the previous form afforded such information as would answer usual and ordinary inquiries from those interested in a commercial way in the Philippine trade, they gave no definite clew as to the effect or operation of the tariff, the groups under which commodities were classified being of such a general nature that the tariff identity of articles was obscured.

For the purpose of making the information required for tariff analysis and revision available, a plan was devised for classification under each respective paragraph of the tariff in such form as to enable the bureau of insular affairs and this office to obtain therefrom not only the data pertaining to tariff operations but that necessary for consolidation in the form prescribed by the original statistical schedule. This new form of report was a radical change from that which had been followed for a number of years, and advantage was taken of the presence in Manila of the chief of the bureau of insular affairs (who also has long been interested in the adoption of some means of providing the information furnished by the new plan) to obtain his approval thereof, with the view of making it effective November 1, 1907, since which date it has been followed.

The work of the statistical division is performed under the direction of the chief statistician by a personnel consisting of 6 Americans and 17 Filipino clerks at a salary expense authorized for the fiscal year 1908 of $18,970.

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PERSONNEL.

The writer assumed charge of this bureau October 21, 1907, since which date numerous changes in organization and consolidations of duties have resulted in a decrease of the average classified personnel of the Manila custom-house of 21 employees, 12 of whom were Americans and 9 Filipinos. In a general way, however, this reduction has been brought about gradually, by not filling positions which became vacant through resignations, transfers, and deaths. At the same time many promotions within the authorized organization have been made, in which it has been the constant aim to recognize merit and industry, while not overlooking length of service as a factor in determining the action. In fact, the customs organization at the port of Manila has been substantially rearranged, with a view to "dovetailing" work, utilizing the full time of all employees, eliminating duplication of labor, and affording the best facilities possible to the public for the orderly transaction of business.

In the progress of this work the impartial and practical application of the civil-service law in accordance with the principles of the merit system by the board charged with its administration has been invaluable.

The proportion of Filipinos employed in the classified service at the port of Manila has increased from 65 per cent in 1907 to 66 per cent June 30, 1908. Of the total of all employees at the last-mentioned date, 77.9 per cent were Filipinos, as against 75.5 per cent in 1907. The unclassified employees, to the number of 207, are all Filipinos.

The following table shows the average personnel of the service at the port of Manila during the fiscal years 1901 to 1908, inclusive, as well as the average percentage of Americans and Filipinos employed during the years of that period:

Fiscal year ended June 30—	Classified.				Unclassified Filipinos.	Total.		Grand total.
	Americans.		Filipinos.			Americans.	Filipinos.	
	Number.	Per cent.	Number.	Per cent.				
1901	115	0.381	187	0.619	74	115	261	376
1902	168	.449	206	.551	111	168	317	485
1903	200	.474	222	.526	98	200	320	520
1904	219	.501	218	.499	173	219	391	610
1905	194	.416	272	.584	146	194	418	612
1906	188	.395	288	.605	157	188	445	633
1907	142	.352	261	.648	175	142	436	578
1908	130	.340	252	.660	207	130	459	589

During the last year there were 40 separations of Americans from the service owing to resignation, discharge, transfer, and death, or about 30.7 per cent of the entire number employed at the beginning of the year, while 17 Filipinos, or about 7 per cent of the entire classified number, left the service in similar manner.

The total number of classified employees at all subports is 75, of which 20, or 36 per cent, are Americans, and 55, or 64 per cent, Filipinos, while the total number of unclassified employees, all Filipinos, is 31, making the percentage of all Filipinos employed to the total number of employees 81.

A factor which can not be overlooked in fixing the personnel of an office is the percentage of employees continually away from duty on leaves of absence, to which they are entitled under the law.

The average number of classified employees in this service at the port of Manila during the fiscal year was 382, and the total number of days absent was 13,822, or an average of 36.2 days for each employee. Twelve per cent of the entire working force was thus absent during the entire year, leaving, on an average, but 88 per cent of the employees available for duty. Hence, in determining the personnel required at least 12 per cent must be added to the number actually required to perform the duties of the bureau in order to prevent confusion and delays in the transaction of business.

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The following statement shows the number of days' leave, of different kinds, taken by the 382 classified employees at this port during the fiscal year 1908:

Month.	Number of days' leave.			
	Accrued.	Vacation.	With half pay.	Without pay.
1907.				
July	603.5	511	16	60.5
August	681.5	417.5	34	98
September	529	489.5	75	38.5
October	530.5	443.5	108	94
November	435.5	462	83	63.5
December	435.5	497	131	28
1908.				
January	317	828	67	10
February	299	890	29	10
March	479	504.5	3	44.5
April	451	601.5	6	56.5
May	485	636.5	31	50
June	467	603.5	27	60.5
Total	5,713.5	6,884.5	610	614

SUMMARY OF RECOMMENDATIONS.

Page.

1. That the act of Congress approved March 8, 1902, be so amended as to repeal that portion relating to refunds of export duty collected on products of the Philippine Islands shipped to the United States.. 658
2. That frontage on the south side of the Pasig River below the Bridge of Spain now reserved for government use be released so far as practicable for commercial purposes, and that filling of the area on river front between the Intendencia Building and Fort Santiago be completed as soon as possible for use in discharging cargo..... 678
3. That Act No. 1508 be so amended as not to require the recording of mortgages on vessels by the register of deeds..... 687
4. That two suitable vessels be purchased or constructed for use of the bureau as revenue cutters..... 691
5. That the age at which Chinese shall be presumed to have ceased to need parental oversight, care, and control, for the purposes of admission into the islands, be restored to 16 years, the age of majority under Chinese law..... 694
6. That balances accruing from immigration receipts be made available, so far as necessary, each year for the payment of charges incident to the enforcement of the immigration law..... 696
7. That seamen on army transports and nonmilitary vessels be shipped and discharged in Philippine ports before the same officers and subject to the same conditions as seamen on American merchant vessels.. 696
8. That the fee for certification of invoices by collectors and deputy collectors of customs of the Philippine Islands covering products shipped therefrom to the United States be reduced to $0.50..... 697
9. That provision be made for the purchase of three new harbor launches for bay work at the port of Manila..... 700
10. That legislation be enacted providing for the establishment of shipping commissioners' offices at the various ports of the islands..... 707
11. That the customs administrative act be revised and reenacted with the changes required 707

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CONCLUSION.

In conclusion, it is a pleasure to record the fact that all officers and employees of the bureau, from the highest in rank to the lowest, have willingly cooperated to the fullest extent of their power in the general endeavor to still further increase the efficiency of the service. In the light of what has been accomplished in years past, as well as the one for which the present report is rendered, and with the assurance of harmonious endeavor in the direction of further improvement, the new year will be entered upon with confidence as to fulfilling the requirements to come.

Respectfully submitted.

GEO. R. COLTON,
Insular Collector of Customs.

To the SECRETARY OF FINANCE AND JUSTICE.
Manila, P. I.

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APPENDIX.

STATISTICAL TABLES WITH REFERENCE TO RECEIPTS AND EXPENDITURES; IMPORTS AND EXPORTS; CARRYING TRADE; REGISTRATION, LICENSING AND NUMBERING OF VESSELS; INSPECTION OF HULLS AND BOILERS; AND IMMIGRATION, AS SHOWN IN THE TABLE OF CONTENTS AT THE BEGINNING OF THIS REPORT.

EXHIBIT A.

RECEIPTS AND EXPENDITURES.

STATEMENT No. 1.

TABLE No. 1.—*Total receipts and expenditures of the bureau of customs at all ports of entry, by fiscal years, since the establishment of the Philippine customs service under American administration, to and including June 30, 1908.*

Fiscal year.	Receipts.	Expenditures.
1899	$3,106,380.34	$32,624.24
1900	5,542,289.18	103,393.14
1901	8,982,813.85	231,050.89
1902	8,528,938.12	433,589.16
1903	9,540,706.92	488,086.67
1904	8,493,868.26	563,463.79
1905	8,263,444.25	520,278.87
1906	7,553,206.06	491,081.68
1907	8,194,708.52	461,111.45
1908	8,318,020.39	[a] 451,463.13
Total	76,524,375.89	3,776,143.02
Average per annum	7,652,437.59	377,614.30

[a] This total covers actual expenditures for maintenance and operation of the bureau of customs, and does not therefore include the cost of supplies and property purchased in 1908 in excess of issues for actual use valued at $9,302.84, not chargeable until used.

TABLE No. 2.—*Receipts of the bureau of customs, by ports, and fiscal years, since the establishment of the Philippine customs service under American administration, to and including June 30, 1908.*

Fiscal year.	Manila.	Cebu.	Iloilo.	Jolo.	Siasi.[a]	Zamboanga.	Appari.[b]
1899	$2,777,666.75	$130,442.42	$198,271.17	.....	.....	.....	.....
1900	4,707,658.28	316,079.77	481,477.29	$27,055.89	$6,010.26	$4,007.69	.....
1901	7,628,005.73	498,860.93	735,172.75	87,395.22	14,704.64	18,674.58	.....
1902	7,250,809.85	550,676.42	612,128.95	61,074.36	10,298.13	43,136.30	$814.11
1903	7,862,271.64	829,486.09	702,686.24	74,266.57	.....	65,396.92	6,599.46
1904	7,131,379.86	634,817.03	604,652.27	76,076.05	.....	41,120.20	1,592.41
1905	6,814,910.78	782,787.59	531,266.01	75,300.28	.....	54,359.93	.....
1906	6,160,408.01	644,212.45	585,329.82	67,214.89	.....	89,409.48	.....
1907	6,605,887.66	802,591.46	596,015.86	82,028.30	.....	100,446.28	.....
1908	6,568,269.77	869,814.04	694,903.04	77,589.04	.....	101,059.07	.....
Total	63,507,268.33	6,059,768.20	5,741,903.40	628,000.60	31,013.03	517,610.45	9,005.98

[a] Closed October 15, 1903.
[b] Opened June 1, 1902, and closed October 15, 1903.

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TABLE NO. 2.—*Receipts of the bureau of customs, by ports, etc.*—Continued.

Fiscal year.	Puerto Princesa.[a]	Cape Melville.[b]	Bongao.[c]	Balabac.[d]	Jurata.[e]	Sitanki.[f]	Totals.
1899							$3,106,380.34
1900							5,542,289.18
1901							8,982,813.85
1902							8,528,938.12
1903							9,540,706.92
1904	$1,718.77	$545.28	$1,223.00	$743.39			8,493,868.26
1905			1,552.54	3,267.12			8,263,444.25
1906			1,456.81	3,825.94	$1,244.00	$104.66	7,553,206.06
1907			346.77	4,718.68	1,434.87	1,238.64	8,194,708.52
1908			55.19	3,477.29	1,329.39	1,523.56	8,318,020.39
Total	1,718.77	545.28	4,634.31	16,032.42	4,008.26	2,866.86	76,524,375.89

[a] Opened October 15, 1903, and closed October 15, 1904.
[b] Opened October 15, 1903, and closed February 25, 1904.
[c] Opened October 15, 1903, and closed November 7, 1907.
[d] Opened February 25, 1904.
[e] Opened July 3, 1905.
[f] Opened February 15, 1906.

STATEMENT NO. 3.

Total receipts of the bureau of customs at all entry ports in the Philippine Islands, by ports and by sources, for the fiscal years 1904 to 1908, inclusive, showing also total revenues accruing respectively to the insular government and to the government of the Moro Province.

TABLE NO. 1—BY PORTS.

	1904.	1905.	1906.	1907.	1908.
Insular government:					
Manila	$7,131,379.86	$6,814,910.78	$6,160,408.01	$6,605,887.66	$6,568,269.77
Cebu	634,817.03	782,787.59	644,212.45	802,591.47	869,814.04
Iloilo	604,652.27	531,266.01	585,329.82	596,015.86	694,903.04
Balabac	743.39	3,267.12	3,825.94	4,718.67	3,477.29
Aparri[a]	1,592.41				
Puerto Princesa[b]	1,718.77				
Cape Melville[c]	545.28				
Total accruing to the insular government	8,375,449.01	8,132,231.50	7,393,776.22	8,009,213.66	8,136,464.14
Moro Province:					
Jolo	76,076.05	75,300.28	67,214.89	82,028.30	77,589.04
Zamboanga	41,120.20	54,359.93	89,409.48	100,446.28	101,059.07
Bongao	1,223.00	1,552.54	1,456.81	346.77	55.19
Jurata[d]			1,244.00	1,434.87	1,329.39
Sitanki[e]			104.66	1,238.64	1,523.56
Total accruing to the government of the Moro Province	118,419.25	131,212.75	159,429.84	185,494.86	181,556.25
RECAPITULATION.					
Total receipts accruing to the insular government	8,375,449.01	8,132,231.50	7,393,776.22	8,009,213.66	8,136,164.14
Total receipts accruing to the government of the Moro Province	118,419.25	131,212.75	159,429.84	185,494.86	181,556.25
Gross receipts, bureau of customs, at all entry ports of the Philippine Islands	8,493,868.26	8,263,444.25	7,553,206.06	8,194,708.52	8,318,020.39

TABLE NO. 2—BY SOURCES.

Insular government:					
Import duty	6,633,019.41	6,545,255.38	5,916,403.23	6,466,852.47	6,525,247.97
Export duty	1,250,934.45	1,079,858.71	1,049,169.63	1,151,120.99	1,165,122.19
Harbor-improvement tax	137,424.17	217,468.57	235,937.21	233,049.82	275,003.04
Tonnage tax—					
Coastwise	107,528.27	102,514.15	49,486.71	45,365.54	43,053.04
Foreign	69,247.[illegible]		48,320.70	10,058.22	
Fines and seizures	30,34[illegible]			5,544.93	4,732.75

[a] Closed Oct. 15, 190[illegible]
[b] Closed Oct. 15, 19[illegible]
[illegible] Feb. 15, 1906.

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Total receipts of the bureau of customs at all entry ports in the Philippine Islands, etc.—Continued.

TABLE NO. 2—BY SOURCES—continued.

	1904.	1905.	1906.	1907.	1908.
Insular government—Cont'd.					
Storage	$12,522.52	$7,203.37	$7,751.42	$5,628.85	$10,616.75
Immigration dues	19,625.00	22,968.00	18,812.00	19,077.50	33,560.00
Admeasurement fees	8,325.48	8,816.12	1,523.28	1,210.81	.....
Auction sales	5,653.75	4,588.85	1,170.29	2,138.16	2,460.56
Various other sources	100,819.10	73,497.70	60,094.10	69,166.37	76,667.84
Total all ports except those in the Moro Province	8,375,449.01	8,132,231.50	7,393,776.22	8,009,213.66	8,136,464.14
Moro Province:					
Import duty	107,098.15	118,841.55	147,928.94	174,543.58	166,831.09
Export duty	2,573.22	2,427.69	2,564.46	2,767.07	4,964.89
Harbor-improvement tax	.....	983.32	2,617.76	2,721.52	3,757.12
Tonnage tax—					
Coastwise	1,046.94	1,166.23	431.96	309.07	415.03
Foreign	1,393.39	1,678.55	2,240.13	654.55	.....
Fines and seizures	494.11	332.75	301.15	107.51	163.30
Storage	128.06	294.22	132.61	310.28	213.23
Immigration dues	444.00	452.00	500.50	559.00	2,062.00
Admeasurement fees	392.84	325.50	10.50	.....	.....
Auction sales	1,219.74	828.82	3.55	277.02	.....
Various other sources	3,628.80	3,882.12	2,698.28	3,245.26	3,149.59
Total all ports in the Moro Province	118,419.25	131,212.75	159,429.84	185,494.86	181,556.25
RECAPITULATION.					
Receipts all ports, by sources:					
Import duty	6,740,117.50	6,664,096.93	6,064,332.18	6,641,396.06	6,692,079.06
Export duty	1,253,507.67	1,082,286.40	1,051,734.09	1,153,888.06	1,170,087.08
Harbor-improvement tax	137,424.17	218,441.89	238,554.97	235,771.34	278,760.16
Tonnage tax—					
Coastwise	108,575.21	103,680.39	49,918.67	45,674.62	43,468.07
Foreign	70,641.36	62,587.88	50,560.83	10,712.77	.....
Fines and seizures	30,843.00	9,494.07	5,408.80	5,652.43	4,896.05
Storage	12,650.58	7,497.59	7,884.03	5,939.14	10,829.98
Immigration dues	20,069.00	23,420.00	19,322.50	19,635.50	35,622.00
Admeasurement fees	8,718.32	9,141.62	1,533.78	1,210.82	.....
Auction sales	6,873.49	5,204.18	1,173.84	2,415.18	2,460.56
Various other sources	104,447.90	77,593.30	62,782.37	72,412.60	79,817.43
Gross receipts, bureau of customs, at all ports in the Philippine Islands	8,493,868.26	8,263,444.25	7,553,206.06	8,194,708.52	8,318,020.39

STATEMENT NO. 4.

EXPORT DUTIES, REFUNDABLE.

Statement of total amount of export duties collected, which are refundable under the provisions of section 2, act of Congress of March 8, 1902, by ports and fiscal years.

Port.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Manila	$35,346.83	$410,946.43	$378,213.07	$376,195.12	$347,296.13	$327,836.82	$245,854.11
Cebu	35,717.86	116,281.67	84,220.76	110,380.44	86,695.66	105,621.76	124,659.25
Total	71,064.69	527,228.10	462,433.83	486,575.56	433,991.79	433,458.58	370,513.36

NOTE.—The following statements and tables have been omitted from Exhibit A and filed in the Bureau of Insular Affairs, War Department:

Statement No. 1, Table No. 3. Expenditures of the bureau of customs, by ports and fiscal years, from 1899 to 1908.

Statement No. 2. Total receipts of the bureau of customs at all entry ports, separately and collectively, 1906 to 1908, by general sources.

Statement No. 5. Total expenditures of the bureau of customs, by ports and for what purpose, from 1904 to 1908; also expenditures made on account of the insular government and the government of Moro Province for the maintenance of the customs service.

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EXHIBIT B.

STATEMENTS OF IMPORTS AND EXPORTS.

STATEMENT No. 6.

Values of imports and exports, exclusive of currency, by fiscal years, from the time of establishing the customs service under American administration to and including June 30, 1908, showing the balance of trade for each fiscal year.

Fiscal year.	Imports.	Exports.	Balance of trade— In favor of Islands.	Balance of trade— Against Islands.
1899	$13,116,567	$14,640,162	$1,523,595	
1900	20,601,436	19,821,347		$780,089
1901	30,276,200	23,222,348		7,053,852
1902	32,029,357	24,544,858		7,484,499
1903	32,978,445	33,150,120	171,675	
1904	33,221,251	30,226,127		2,995,124
1905	30,879,048	32,355,865	1,476,817	
1906	25,799,290	31,918,542	6,119,252	
1907	28,786,063	33,721,767	4,935,704	
1908	30,918,745	32,829,816	1,911,071	
Total	278,606,402	276,430,952	16,138,114	18,313,564

Balance of trade during entire period stated $2,175,450
Average annual balance of trade during period 217,545

NOTE.—The value of merchandise and supplies received and entered free of duty for the insular government and the United States Government, and for railway construction under the provisions of Act No. 1566, of date December 7, 1906, not included in the above figures.

STATEMENT No. 7.

Value of currency imported into and exported from the Philippine Islands by the government and through commercial channels during the years 1902 to 1908, inclusive, (values expressed in United States currency) according to the records of the insular treasury.

IMPORTED.

Year.	By the Government.			Through commercial channels.				Total.
	Old Spanish currency.	Philippine currency. First coinage.	Philippine currency. Last coinage.	Mexican currency.	Philippine currency.	United States currency.	English gold.	
1902–3		$1,600,000				$500,000		$2,100,000
1903–4		7,963,760		$934,483		3,300,000		12,198,243
1904–5		3,875,600				1,000,000		4,875,600
1905–6		3,404,396				3,350,000		6,754,396
1906–7		30,000	$2,637,500					2,667,500
1907–8			8,600,500		$181,048			8,781,548
Total		16,873,756	11,238,000	934,483	181,048	8,150,000		37,377,287

EXPORTED.

1903–4	$3,312,931			$4,035,927				$7,348,858
1904–5	3,401,271			3,299,258	$2,576	$562,645		7,265,750
1905–6	286,734			507,582		165,615		959,931
1906–7	31,904		$4,000,000	324,393		21,175	$1,200	4,378,672
1907–8	4,413	$18,914	7,952,500	41,199		21,843	3,688	8,042,557
Total	7,037,253	18,914	11,952,500	8,208,359	2,576	771,278	4,888	27,995,768

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STATEMENT No. 16.

Comparative statement of the value of imports into the Philippine Islands, by countries, during the four fiscal years ending June 30, 1908, in the order of relative importance during the last year, showing duties collected thereon.

[Gold and silver currency not included.]

Country.	1905.		1906.		1907.		1908.	
	Values.	Duties.	Values.	Duties.	Values.	Duties.	Values.	Duties.
United Kingdom	$4,848,393	$1,165,634	$5,224,020	$1,316,735	$6,645,575	$1,475,549	$6,109,586	$1,431,891
French East Indies	5,968,614	1,063,772	3,854,244	914,813	3,474,236	798,625	5,746,414	1,181,003
United States	5,761,660	1,105,677	4,333,917	804,441	5,664,002	1,070,821	5,079,670	999,666
China	2,942,331	571,230	2,650,320	463,556	2,759,715	413,369	2,499,169	394,024
British Australasia	1,365,662	62,435	1,523,668	93,676	1,753,874	120,267	2,046,039	125,429
Germany	1,498,898	389,778	1,360,961	354,722	1,655,422	424,848	1,933,808	491,851
Spain	1,931,359	557,982	1,787,310	540,967	1,756,667	549,942	1,654,480	502,282
British East Indies	2,007,514	592,059	1,515,042	573,173	1,626,299	612,862	1,239,084	362,666
Japan	1,018,437	215,635	657,386	216,869	1,010,043	258,260	1,111,863	306,426
France	832,568	227,327	833,858	224,225	851,529	247,500	821,348	237,512
Switzerland	444,970	96,334	592,954	142,172	605,260	131,635	751,524	139,181
Hongkong	209,953	59,803	304,291	74,668	346,622	62,628	463,970	64,928
Belgium	299,155	58,043	259,521	61,856	293,055	72,492	342,365	90,233
Siam	902,566	154,653			208,126	40,214	307,507	64,359
Italy	152,802	44,923	197,865	60,176	258,855	77,093	249,489	75,347
Dutch East Indies	79,175	22,553	70,592	21,762	262,750	97,021	185,020	56,700
Netherlands	103,139	70,114	150,165	75,265	221,897	103,873	166,605	108,786
Austria-Hungary	94,343	27,734	88,788	24,546	170,534	45,691	123,942	31,258
Denmark	5,213	316	8,704	600	18,672	1,544	21,479	2,253
Persia	76,179	36,337			36,346	23,227	20,891	13,615
Quebec, Ontario, etc.	20,344	11,624	9,367	4,986	13,366	6,806	13,234	6,125
British Columbia	1,100	606	464	46	11,354	1,680	8,168	1,189
Norway	6,900	825		154	1,697	201	6,173	509
All other	307,773	129,036	375,853	95,038	19,926	5,574	16,917	4,252
Total	30,879,048	6,664,430	25,799,290	6,064,446	29,665,822	6,641,722	30,918,745	6,691,485

STATEMENT No. 17.

Comparative statement of the value of exports from the Philippine Islands, by countries during the four fiscal years ending June 30, 1908, in the order of relative importance during the fiscal year 1908.

Country.	1905.	1906.	1907.	1908.
United States	$15,668,026	$11,580,169	$12,082,364	$10,332,116
United Kingdom	8,292,288	7,499,627	8,749,214	8,870,923
France	1,491,753	2,703,328	2,689,593	3,905,878
Hongkong	2,361,958	3,659,031	2,551,902	2,438,438
Spain	1,434,126	1,803,455	1,794,890	1,719,612
China	1,007,957	1,705,809	2,035,390	1,527,323
British East Indies	624,312	667,022	799,123	911,767
Germany	129,610	459,426	788,018	602,085
Australasia	442,922	457,271	481,576	528,208
Belgium	43,720	182,861	244,759	516,336
Japan	548,607	532,245	477,070	493,800
Austria-Hungary	37,282	379,021	340,145	386,671
Italy	59,316	71,260	155,284	248,013
Netherlands	73,032	65,852	313,056	193,759
Dutch East Indies	24,132	31,509	24,632	35,002
Korea	2,080	3,534	7,198	14,162
Canada				13,425
French East Indies	11,308	6,335	56,820	12,345
Siam			8,246	11,882
British Africa	830	8,760	7,760	11,314
Uruguay	7,040	17,422	14,553	9,919
Gibraltar	5,831	22,369	18,107	8,480
Portugal	7,900	7,380		7,634
Argentine Republic	5,670	9,447	11,226	5,875
Canary Islands	760			5,344
All other countries	75,405	45,409	70,841	19,505
Total	32,355,865	31,918,542	33,721,767	32,829,816

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STATEMENT No. 20.

Comparative statement of the value of imports and exports carried by vessels engaged in the carrying trade during the four fiscal years ending June 30, 1908.

[Gold and silver currency not included.]

Nationality (flag).	Imports.				Exports.			
	1905.	1906.	1907.	1908.	1905.	1906.	1907.	1908.
Domestic	$55,542	$483,942	$662,901	$1,155,614	$101,893	$50,737	$136,868	$55,408
American	3,098,907	1,783,266	942,940	677,181	3,493,862	1,474,587	831,463	931,889
British	17,799,592	14,929,181	16,696,783	16,252,967	24,553,636	24,547,513	25,611,653	24,667,814
Dutch	6,224							
French	217,209	66,400	158,025	292,768	157,923	351,086	988,730	906,643
German	3,526,828	2,433,373	3,291,047	3,796,631	1,041,821	1,989,871	2,013,595	1,868,392
Spanish	5,477,060	5,820,663	6,195,281	5,425,498	2,180,204	2,420,140	2,834,058	2,435,055
Swedish			41,638	51,278			43,016	
Norwegian	657,637	157,968	897,825	2,085,292	808,711	473,563	515,697	387,314
Japanese			760,718	995,984			558,026	1,576,120
All other	40,049	124,497	18,654	185,532	17,815	611,045	188,651	1,181
Total	30,879,048	25,799,290	29,665,822	30,918,745	32,355,865	31,918,542	33,721,767	32,829,816

NOTE.—The following statements have been omitted from Exhibit B and filed in the Bureau of Insular Affairs, War Department:

Statement No. 8. Total values of some of the principal groups of commodities imported from the United States and from all other countries, at all ports, from 1901 to 1908.

Statement No. 9. Total values and quantities of the principal products exported to the United States and to all other countries, 1901 to 1908.

Statement No. 10. Total values of principal commodities imported during 1908, by ports.

Statement No. 11. Total values of principal products exported during 1908, by ports.

Statement No. 12. Summary of the values of imports from the United States and from all other countries from 1904 to 1908, by ports.

Statement No. 13. Summary of the values of exports to the United States and to all other countries, 1904 to 1908, by ports.

Statement No. 14. Value of merchandise entered free of duty, by ports and countries of origin, exclusive of supplies for United States and insular governments, 1904 to 1908; also quantity, value, and class of supplies and material imported by the Manila Railroad Company and Philippine Railway Company during 1908 and total value of all imports under Act No. 1566.

Statement No. 15. Comparative statement, by quantities, of the principal classes of articles imported free of duty by the insular and United States Governments from 1905 to 1908, not including United States army supplies brought in transports; also supplies for the United States Army imported in transports.

Statement No. 18. Value of merchandise imported during 1908, by countries of origin and nationality of vessels.

Statement No. 19. Value of merchandise exported during 1908, by countries of destination and nationality of vessels.

Statement No. 21. Comparative statement of the values of, and duties collected on, merchandise, exclusive of coins and currency, imported during 1907 and 1908, showing also the origin of all commodities and quantities of principal imports during the latter year.

Statement No. 22. Comparative statement of the values of, and duties collected on, all products and merchandise, exclusive of coins and currency, exported during 1907 and 1908; showing also the destination of all commodities exported and the quantities of the principal exports during the latter year.

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EXHIBIT C.

CARRYING TRADE.

STATEMENT NO. 23.

Comparative statement showing the number and tonnage of vessels engaged in the foreign and the coastwise carrying trade of the Philippine Islands during the three fiscal years ending June 30, 1908.

TABLE NO. 1.—FOREIGN CARRYING TRADE.

Port.	Number.			Registered tonnage.		
	1906.	1907.	1908.	1906.	1907.	1908.
ENTERED.						
Manila	532	517	591	1,056,440	1,076,929	1,215,615
Cebu	93	80	89	180,429	130,745	131,728
Iloilo	80	32	50	89,643	49,590	95,739
Jolo	35	20	31	25,779	8,644	13,417
Zamboanga	64	55	42	70,791	54,410	47,045
Bongao	50	61	10	545	307	57
Balabac	16	30	48	123	200	3,925
Jurata	41	40	36	305	243	3,245
Sitanki	.....	83	136	.....	500	1,131
Total	911	918	1,033	1,424,055	1,321,568	1,511,902
CLEARED.						
Manila	548	485	562	1,088,555	996,776	1,176,147
Cebu	89	57	64	177,262	130,337	124,404
Iloilo	84	77	71	92,020	104,816	97,240
Jolo	30	18	21	25,331	8,265	12,036
Zamboanga	65	47	40	70,741	51,041	46,088
Bongao	74	129	11	752	659	55
Balabac	15	29	44	107	209	3,905
Jurata	38	39	24	287	241	2,242
Sitanki	.....	150	173	.....	922	2,331
Total	943	1,031	1,010	1,455,055	1,293,266	1,464,448

TABLE NO. 2.—COASTWISE CARRYING TRADE.

ENTERED.						
Manila	1,916	2,202	2,360	385,371	453,703	465,949
Cebu	1,602	1,894	2,098	145,926	158,958	181,262
Iloilo	3,774	3,642	3,731	189,505	202,550	201,424
Jolo	80	78	149	19,270	33,681	54,299
Zamboanga	133	121	194	29,178	42,761	66,531
Bongao	9	11	.....	836	1,207	.....
Balabac	6	1	3	42	15	45
Jurata	2	2	18	31	102	2,183
Sitanki	6	12	19	112	1,212	2,248
Total	7,528	7,963	8,572	770,271	894,189	973,941
CLEARED.						
Manila	1,913	2,261	2,360	380,853	461,390	466,935
Cebu	1,619	1,896	2,117	152,294	158,581	185,003
Iloilo	3,797	3,664	3,714	190,530	200,485	203,192
Jolo	83	79	145	19,483	33,768	53,624
Zamboanga	135	120	194	29,924	43,249	65,959
Bongao	8	11	.....	749	1,207	.....
Balabac	8	1	3	56	15	45
Jurata	2	1	22	41	87	2,900
Sitanki	4	13	13	102	1,133	1,310
Total	7,569	8,046	8,568	774,032	899,915	978,968

NOTE.—The following statement has been omitted from Exhibit C and filed in the Bureau of Insular Affairs, War Department:

Statement No. 24. Statement of foreign vessels entered and cleared at the various ports during 1908.

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Comparative statement showing the number and tonnage of vessels engaged in the foreign and the coastwise carrying trade of the Philippine Islands during the three fiscal years ending June 30, 1908—Continued.

RECAPITULATION.

Class.	Entered.				Cleared.			
	With cargo.		In ballast.		With cargo.		In ballast.	
	Vessels.	Registered tonnage.	Vessels.	Registered tonnage.	Vessels.	Registered tonnage.	Vessels.	Registered tonnage.
Sail	127	3,933	85	433	157	945	66	2,794
Steam	722	1,330,237	99	177,299	495	988,889	292	471,820
Total	849	1,334,170	184	177,732	652	989,834	358	474,614

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EXHIBIT D.

REGISTRATION, LICENSING, AND NUMBERING OF VESSELS.

STATEMENT No. 29.

Consolidated statement of the number and tonnage of all vessels to which first and second class and lighterage and harbor licenses have been issued, in the Manila collection district, since January 1, 1900.

Period.	First class.		Second class.		Lighterage and harbor.		Total.	
	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.
Calendar year 1900	224	37,618.29	646	26,167.96	.....	.....	870	63,786.25
Calendar year 1901	250	37,250.05	907	33,238.17	.....	.....	1,157	70,488.22
Calendar year 1902	284	38,524.13	952	32,525.29	86	5,924.07	1,322	76,973.49
Calendar year 1903	433	39,760.22	36	2,014.96	787	33,963.78	1,256	75,738.96
6 months from January 1 to June, 1904	381	45,403.30	.....	(a)	568	26,110.67	949	71,513.97
Fiscal year 1905	437	45,287.32	.....	.....	846	38,922.57	1,283	84,209.89
Fiscal year 1906	350	40,460.64	.....	.....	634	30,535.76	984	70,996.40
Fiscal year 1907	363	38,662.06	.....	.....	541	25,493.62	904	64,155.68
Fiscal year 1908	337	38,009.79	.....	.....	514	24,299.74	851	62,309.53
Total	3,059	360,975.80	2,541	93,946.38	3,976	185,250.21	9,576	640,172,39

[a] Second-class licenses discontinued.

NOTE.—The following statements have been omitted from Exhibit D and filed in the Bureau of Insular Affairs, War Department:

Statement No. 25. Alphabetical list of vessels to which official numbers have been assigned during 1908.

Statement No. 26. Vessels to which certificates of protection have been issued during 1908.

Statement No. 27. Vessels reported totally wrecked or destroyed in Philippine waters during 1908.

Statement No. 28. Vessels to which certificates of change of name have been issued during 1908; also changes in names of vessels documented in the Philippine Islands from January 1, 1905, to June 30, 1908.

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EXHIBIT E.

INSPECTION OF HULLS AND BOILERS.

NOTE.—The following statements have been omitted from Exhibit E and filed in the Bureau of Insular Affairs, War Department:

Statement No. 30. Steam vessels inspected during 1908 to which certificates of inspection were issued.

Statement No. 31. Steam vessels inspected during 1908 to which certificates of inspection were denied for cause.

Statement No. 32. Steam vessels not in commission awaiting repairs, June 30, 1908. (Total 32.)

Statement No. 33. Steam vessels condemned, lost, or wrecked during 1908.

Statement No. 34. Sailing vessels inspected during 1908 to which certificates of inspection were issued.

Statement No. 35. Sailing vessels inspected during 1908 to which certificates of inspection were denied for cause.

Statement No. 36. Consolidated statement of the number of steam and sailing vessels inspected to which certificates of inspection were issued, denied, placed out of commission, or condemned.

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EXHIBIT F.

IMMIGRATION.

STATEMENT NO. 37.

Number of passengers arrived in the Philippine Islands, by ports, during the fiscal year ending June 30, 1908.

Port.	Aliens admitted.		Arrivals of citizens of—		Total arrivals.	Aliens debarred.	Total admitted.
	Immigrant.	Nonimmigrant.	United States.	Philippine Islands.			
Manila	1,510	5,502	3,444	757	11,300	87	11,213
Iloilo	51	196	7	30	288	4	284
Cebu	56	96	10	13	190	15	175
Zamboanga	60	203	49	8	320	.....	320
Jolo	9	121	.....	.....	145	15	130
Sitanki	1	13	1	.....	15	.....	15
Jurata	13	4	.....	.....	17	.....	17
Balabac	6	39	.....	.....	45	.....	45
Bongao	.....	25	.....	.....	25	.....	25
Total	1,706	6,199	3,511	808	12,345	121	12,224

STATEMENT NO. 38.

Immigrant aliens and returning alien residents admitted into the Philippine Islands during the fiscal years ended June 30, 1907 and 1908, by ports.

Port.	1907.							1908.						
	Immigrant aliens.			Returning alien residents.			Grand total.	Immigrant aliens.			Returning alien residents.			Grand total.
	Male.	Female.	Total.	Male.	Female.	Total.		Male.	Female.	Total.	Male.	Female.	Total.	
Manila	.....	.....	2,126	.....	.....	6,969	9,095	.....	.....	1,510	.....	.....	5,502	7,012
Iloilo	69	9	78	296	20	316	394	46	5	51	178	18	196	247
Cebu	46	5	51	134	4	138	189	53	3	56	96	....	96	152
Zamboanga	10	6	16	129	12	141	157	42	18	60	185	18	203	263
Jolo	5	4	9	117	3	120	129	9	....	9	116	5	121	130
Sitanki	.....	.....	.....	1	....	1	1	1	....	1	13	....	13	14
Jurata	.....	.....	.....	.....	....	1	1	9	4	13	4	....	4	17
Balabac	.....	.....	.....	.....	....	19	19	.....	.....	6	.....	....	39	45
Bongao	.....	.....	.....	18	13	31	31	.....	.....	.....	15	10	25	25
Total	130	24	2,280	695	52	7,736	10,016	160	30	1,706	607	51	6,199	7,905

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STATEMENT No. 39.

Immigrant and returning alien residents admitted into the Philippine Islands during the fiscal years 1907 and 1908, showing increase and decrease, by nationalities.

Nationality.	Immigrant aliens.		Increase (+) or decrease (−).	Returning alien residents.		Increase (+) or decrease (−).
	1907.	1908.		1907.	1908.	
Spaniards	233	177	− 56	311	259	− 52
Japanese	234	229	− 5	124	92	− 32
British	136	178	+ 42	114	201	+ 87
German	45	79	+ 34	48	63	+ 15
Italian	28	35	+ 7	21	4	− 17
French	29	60	+ 31	8	27	+ 19
Other European	102	202	+100	114	89	− 25
East Indians	45	88	+ 43	40	69	+ 29
Chinese	1,337	543	−794	6,801	5,200	−1,601
Other Asiatics	27	.....	− 27	15	11	− 4
Miscellaneous	64	115	+ 51	140	184	+ 44
Total	2,280	1,706	−574	7,736	6,199	−1,537

STATEMENT No. 48.

Chinese population of the Philippine Islands, as estimated and enumerated by various authorities.

Year.	Basis.	Manila.	Provinces.	Total.
1899	Estimate (Report of Schurman Commission)	23,000	17,000	40,000
1902–3	Census of 1902	21,083	19,952	41,035
1903–4	Registered under act 702	27,189	22,474	49,663
1907	Board of health census	18,028	.....	18,028
1908	Estimate (bureau of customs)	20,000	36,000	56,000

NOTE.—The following statements have been omitted from Exhibit F and filed in the Bureau of Insular Affairs, War Department:

Statement No. 40. Appeals from decisions under immigration laws, and aliens admitted on bond, by ports, during 1908.

Statement No. 41. Appeals from decisions under immigration laws, and aliens admitted on bond at all ports, by causes, during 1908.

Statement No. 42. Comparative statement showing the number of aliens denied admission, and causes of rejection, for the years 1905 to 1908.

Statement No. 43. Applications for admission by Chinese at all ports during 1908, showing disposition.

Statement No. 44. Statement showing number of resident Chinese merchants and laborers departing from and returning to the Philippine Islands, by ports, during 1908.

Statement No. 45. Applications received at Manila for resident Chinese merchants' certificates, by fiscal years, 1902 to 1908.

Statement No. 46. Chinese arrested on the charge of being in the islands in violation of law, and action taken, during 1908.

Statement No. 47. Chinese arriving at all ports during fiscal years 1901 to 1908, showing number and percentage of rejections.

Statement No. 49. Arrivals and departures of Chinese at all ports during fiscal years 1904 to 1908.

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STATEMENT No. 50.

Receipts and expenditures on account of the immigration service during the fiscal year 1908, at all ports, showing excess of receipts over cost of maintenance.

Item.	Manila.	Subports.	Total.
RECEIPTS.			
Head tax	$27,310.00	$2,984.00	$30,294.00
Permit to transfer Chinese crew	90.00	.....	90.00
Return certificates of residence	8,205.00	775.00	8,980.00
Landing certificates of residence	359.00	25.00	384.00
Duplicate original certificates of residence	81.00	1.00	82.00
Fines and miscellaneous fees	4.00	.....	4.00
Total receipts	36,049.00	3,785.00	39,834.00
EXPENDITURES.			
Salaries and wages, supplies, electric lights, water, and miscellaneous	.....	.....	26,813.48
Excess of receipts over expenditures	.....	.....	13,020.52

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EXHIBIT No. 4.

REPORT OF THE COLLECTOR OF INTERNAL REVENUE.

DEPARTMENT OF FINANCE AND JUSTICE,
BUREAU OF INTERNAL REVENUE,
Manila, August 6, 1908.

SIR: I have the honor to submit the following report on the operations of this bureau during the fiscal year ended June 30, 1908:

As shown by the following summary of collections, the total amount collected during the fiscal year 1908 was ₱14,339,773.15, as compared with ₱12,748,963.91 during the fiscal year 1907, an increase of ₱1,590,809.24, or 12½ per cent.

In the total collections under the provision of the internal-revenue law, Act No. 1189, an increase of ₱1,651,948.84, or over 17½ per cent, is shown as compared with the collections during the fiscal year 1907. A large percentage of this increase is due to the increased cedula tax in effect in 28 provinces for the calendar year 1908. Internal-revenue collections exclusive of cedula taxes show an increase of 4 per cent. Increases are also shown in the collections of weights and measures fees, of city of Manila taxes, and of San Lazaro estate rents.

There was a falling off in collections under the opium law of ₱277,667.87.

Summary of collections.

	During the fiscal year—	
	1908.	1907.
Internal-revenue law (Act No. 1189, Philippine Commission):		
Manufacturers of alcohol and tobacco products	₱4,990,638.48	₱4,736,089.51
Licenses—		
Dealers in alcohol and tobacco products	502,183.93	511,358.68
Merchants, manufacturers, and common carriers	1,305,313.70	1,374,245.97
Occupations, trades, and professions	417,180.40	380,172.72
Mines and mining concessions	329.28	2,140.19
Banks and bankers	167,892.02	141,606.78
Insurance companies	19,456.11	20,599.06
Documentary stamp taxes	182,725.40	181,136.96
Cedulas	3,285,479.00	1,919,705.00
Forest products	211,570.62	164,143.32
Miscellaneous	1,275.42	897.33
Total	11,084,044.36	9,432,095.52
Opium law (Acts Nos. 1461 and 1761, Philippine Commission)	311,953.90	[a] 589,621.77
Weights and measures law (Act No. 1519, Philippine Commission)	29,326.35	[b] 5,746.15
City of Manila taxes and revenues (various acts of the Philippine Commission):		
Real-estate tax	1,283,795.34	1,302,855.00
Matadero receipts	176,671.02	164,962.53
Market receipts	283,150.15	238,054.41
Municipal licenses	224,532.56	216,850.40
Rentals of city property	22,356.03	19,950.32
Municipal court receipts	55,045.37	53,331.43
Pail system	58,168.03	48,508.26
Vault cleaning	21,538.00	39,199.00
Building permits	14,994.87	15,314.47
Water rents	234,478.23	221,187.98
Board of health fees	14,538.70	9,752.60
Justice of peace and sheriff's fees	17,670.55	22,721.22
Cementerio del Norte	12,349.08	10,996.50
Franchise taxes of Manila Electric Railway and Light Co	47,208.23	40,861.54
Other minor receipts, miscellaneous, and internal-revenue dividend	392,821.87	263,487.44
Total	2,859,318.03	2,668,033.10
San Lazaro estate (Executive Order No. 15, series 1906)	54,083.23	53,467.37
Sale public mineral lands (act of Congress approved July 1, 1902)	1,047.28	.....

[a] Taxes collected eight months only during 1908. Prohibition effective March 1, 1908.
[b] Manila and province of La Laguna, four months only during 1907. In operation during 1908 in part of islands only.

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RÉSUMÉ OF COLLECTIONS.

Internal-revenue taxes	₱11,084,044.36	₱9,432,095.52
Opium taxes	311,953.90	589,621.77
Weights and measures taxes	29,326.35	5,746.15
Municipal taxes, city of Manila	2,859,318.03	2,668,033.10
San Lazaro Estate rentals	54,063.23	53,467.37
Sale public mineral lands	1,047.28	.....
Grand total	14,339,773.15	12,748,963.91

Of the totals stated above, 59 per cent was collected in Manila and 41 per cent in the provinces.

APPORTIONMENT OF INTERNAL-REVENUE TAXES.

Under the apportionment provisions of Act No. 1189, as amended, the internal-revenue taxes collected during the year have accrued to the various treasuries as follows:

	1908.	1907.
To the insular treasury:		
During the entire fiscal year 1907, 75 per cent	.....	₱5,425,485.23
July 1, 1907, to Aug. 19, 1907, 75 per cent	₱937,630.97	.....
August 20, 1907, to Dec. 31, 1907, 70 per cent [a]	1,740,809.69	.....
January 1, 1908, to June 30, 1908, 60 per cent [a]	2,240,866.41	.....
Total	4,919,307.07	5,425,485.23
To the provincial treasuries:		
One-half of regular cedula taxes	968,007.75	959,852.50
All road and bridge cedula taxes [b]	1,349,463.50	.....
Share of other collections during entire fiscal year 1907, 10 per cent	.....	723,398.03
Share of other collections, July 1, 1907, to Dec. 31, 1907, 10 per cent [a]	373,704.56	.....
Share of other collections, January 1, 1908, to June 30, 1908, 20 per cent [a]	746,955.47	.....
Total	3,438,131.28	1,683,250.53
To the municipal treasuries:		
One-half of regular cedula taxes	968,007.75	959,852.50
Certain license taxes	326,742.40	278,410.22
Share of other collections during entire fiscal year 1907, 15 per cent	.....	1,085,097.04
Share of other collections, July 1, 1907, to Aug. 19, 1907, 15 per cent [a]	187,526.19	.....
Share of other collections, Aug. 20, 1907, to June 30, 1908, 20 per cent [a]	1,244,329.67	.....
Total	2,726,606.01	2,323,359.76
Grand total	11,084,044.36	9,432,095.52

[a] Act No. 1695. [b] Act No. 1652.

The cost to the government for the collection of these taxes, including estimated unpaid obligations incurred during the year, was ₱700,000, or 4.9 centavos for each peso collected. This sum includes ₱577,374 received by appropriation, ₱101,809 from the city of Manila for the assessment and collection of city taxes, and ₱20,817 from the special opium fund created by Act No. 1761. The above sum, however, does not include the expenses of collection incurred by the provincial governments. While the total expense of this bureau is shown above as being 4.9 per cent of the collections, the fact is that a considerable amount was expended in the enforcement of certain laws which are not revenue measures.

The percentage cost for collecting the city of Manila taxes was a fraction over 3.5 per cent, which is nearly 1 per cent less than that for any previous year except the fiscal year 1907.

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PART I.

INTERNAL-REVENUE TAXES.[a]

ALCOHOL AND TOBACCO PRODUCTS.

DISTILLED SPIRITS.

There were collected as taxes on distilled spirits removed for domestic consumption ₱1,729,757.16, as against ₱1,681,419 collected during the fiscal year 1907. This represents a gain in tax collections of ₱48,338.16, equal to an increase in the output from the distilleries of 241,690 proof liters of distilled spirits or compounded liquors. There were 592 proof liters of distilled spirits of domestic manufacture exported to other countries and 98 proof liters removed for sale to the army and navy for industrial purposes without the payment of tax.

During the year the few remaining cauas of the 450 heretofore in operation disappeared, and about 15 stills of a more modern type were installed in their stead in the various provinces. On June 30, 1908, there were in operation 68 stills of modern type. Considerable improvement has been effected during the year in the equipment and management of distilleries.

The following comparative figures are submitted:

Fiscal year—	Distilled spirits manufactured and—		
	Consumed in the Philippine Islands.	Exported to foreign countries.	Total.
	Proof liters.	*Proof liters.*	*Proof liters.*
1906	6,043,022	.....	6,043,022
1907	8,251,101	2,464	8,253,565
1908	8,641,291	592	8,641,883

FERMENTED LIQUORS.

There were collected as taxes on beer removed for domestic consumption ₱137,390, as compared with ₱122,390 during the fiscal year 1907; an increase of ₱15,000 in tax collections, equal to an increase in the output of the one brewery in the islands of 375,000 liters, or over 12 per cent. There were exported to other countries 5,890 liters of beer, as compared with 878 liters exported during the fiscal year 1907. Foreign beers continue to be imported, but in smaller quantities; the prices at which imported beers are sold prevents serious competition with the domestic product.

LEAF TOBACCO.

The installation of the leaf-tobacco regulations prepared by this office was commenced in September, 1907, and they have now been installed in the principal tobacco-producing provinces. These regulations are for the guidance of tobacco growers, manufacturers, and internal-revenue officers, and also for the purpose of furnishing data that will greatly assist in the prevention of frauds on the revenues, as well as statistical data which will be of great value to the government and to the growers and manufacturers themselves. Provisions are contained therein requiring tobacco growers, in the curing and preparation of tobacco, to properly smooth, fold, and press each leaf and arrange same into manos duly graded as to size, kind, and quality. This requirement, together with the giving of tobacco bounties offered by the government by the provisions of Act No. 1767, enacted October 11, 1907, to encourage the production of tobacco, will no doubt result in an improvement in the quality and an increase in the quantity of tobacco produced. For the past several years the demand for leaf tobacco suitable for the manufacture of cigars for export has exceeded the supply.

[a] Collected under authority of Acts Nos. 1189, 1257, 1338, 1370, and 1652, Philippine Commission.

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MANUFACTURED TOBACCO, SMOKING AND CHEWING.

There were collected as taxes on manufactured tobacco removed for domestic consumption ₱110,752.50, as against ₱106,287.54 during the fiscal year 1907. This represents an increase of ₱4,464.96, equal to an increase in the output from the various manufactories of 9,302 kilograms of smoking and chewing tobacco. In addition to that consumed in these islands, and which paid the tax, the exports of smoking tobacco, free of tax, were as follows:

Country to which exported.	Total exports for the fiscal year—		
	1908.	1907.	1906.
	Kilos.	*Kilos.*	*Kilos.*
High seas	7,735	7,191	5,676
Canary Islands	7,360	8,280	1,840
North Africa	3,680	.....	.....
Gibraltar	3,312	55,201	28,169
England	2,336	498	.....
China	1,188	1,290	1,497
France	1,150	.....	.....
Italy	690	1,840	1,840
Germany	193	418	3
India	127	194	108
New Guinea	100	4	.....
Straits Settlements	6	36	.....
Japan	6	.....	.....
Java	5	.....	.....
Morocco	.....	460	.....
Central Africa	.....	23	.....
Spain	.....	8	1,840
Indo-China	.....	3	.....
Africa	.....	.....	18,400
Egypt	.....	.....	6
United States	.....	.....	1
Total	27,888	75,446	59,380

CIGARS.

There were collected as taxes on cigars removed for domestic consumption ₱195,394.44, as against ₱189,850.57 during the fiscal year 1907; an increase of ₱5,543.87. In addition to those consumed in these islands and which paid tax as above, cigars were exported, tax free, as follows:

Country to which exported.	Total exports for the fiscal year—		
	1908.	1907.	1906.
	Number.	*Number.*	*Number.*
China	47,746,584	52,239,068	41,277,617
Australia	13,115,462	10,428,046	11,200,571
Straits Settlements	11,088,978	8,456,951	6,308,658
England	8,356,487	11,106,243	9,956,576
Spain	5,604,000	6,267,708	3,115,260
India	5,528,157	4,203,799	4,291,376
Japan	3,988,352	4,778,695	339,615
High seas	3,083,294	3,030,680	3,130,419
Germany	2,990,445	2,447,087	3,579,465
France	2,601,275	3,296,605	3,640,900
South Africa	1,947,820	1,364,952	.....
Java	1,365,106	768,175	226,400
Canada	1,292,267	1,216,500	522,600
Indo-China	780,834	554,131	256,449
Holland	770,095	428,600	208,500
South America	672,535	1,946,000	1,553,100
New Zealand	665,454	802,426	672,649
Gibraltar	518,000	463,500	600,150
Italy	478,795	499,250	744,050
Siam	440,700	460,275	.....
Belgium	428,605	291,990	74,675
Scotland	361,150	360,070	6,025
Malta	340,250	285,250	.....
Korea	339,779	306,075	121,130
Canary Islands	320,000	220,000	330,000

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Country to which exported.	Total exports for the fiscal year—		
	1908.	1907.	1906.
	Number.	*Number.*	*Number.*
Austria	252,000	515,000	.....
Honolulu	129,025	156,975	202,030
Egypt	121,200	37,000	32,500
North Africa	80,000	10,850	.....
Denmark	75,000	587,350	1,199,080
Siberia	62,300	750	.....
Portugal	53,700	37,300	.....
Guam	44,000	28,100	22,000
Norway	30,000	.....	.....
United States	29,570	82,175	231,206
Arabia	22,025	21,475	.....
Switzerland	18,000	4,375	318,629
Russia	14,054	.....	11,280
Turkey	11,000	.....	.....
New Guinea	2,100	23,509	.....
East Africa	111	3,125	.....
Morocco	.....	30,000	.....
Samoa Islands	.....	10,000	.....
Persia	.....	5,000	.....
Central Africa	.....	1,600	.....
Africa	.....	.....	162,632
Guatemala	.....	.....	6,000
Total	115,768,509	117,766,660	94,341,542

The following comparative figures are submitted:

Fiscal year—	Cigars manufactured and—		Total.
	Consumed in the Philippine Islands.	Exported to foreign countries.	
	Number.	*Number.*	*Number.*
1906	74,184,537	94,341,542	168,526,079
1907	79,476,459	117,766,660	197,243,119
1908	82,986,278	115,768,509	198,754,787

CIGARETTES.

There were collected as taxes on cigarettes removed for domestic consumption ₱2,534,657.38, as against ₱2,360,485.49 during the fiscal year 1907. This is an increase of ₱174,171.89, or about 7½ per cent. In addition to those consumed in these islands, and which paid the tax, as above, cigarettes were exported, tax free, during the year to other countries as follows:

Country to which exported.	Total exports for the fiscal year—		
	1908.	1907.	1906.
	Number.	*Number.*	*Number.*
China	40,706,017	152,506,287	18,347,177
Korea	23,115,762	240,000	155,250
India	2,931,125	675,654	163,450
Indo-China	1,390,400	91,904	240,280
Japan	1,136,500	20,548	17,828
High seas	1,065,375	562,500	622,449
Straits Settlements	1,004,355	1,737,100	705,336
England	223,225	307,682	25,950
Siam	191,520	1,567,500	.....
Guam	171,000	210,000	165,000
New Guinea	126,100	91,750	.....
Java	60,400	.....	86,500
Australia	57,952	120,335	97,278
Holland	37,500	3,000	.....
Italy	33,600	.....	.....
Egypt	30,000	.....	.....

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Country to which exported.	Total exports for the fiscal year—		
	1908.	1907.	1906.
	Number.	*Number.*	*Number.*
Siberia	21,600	.....	480
France	20,000	3,000	100,000
New Zealand	15,305	4,200	.....
United States	11,800	4,500	135,984
Spain	9,075	9,269	54,400
Scotland	8,000	.....	.....
Germany	7,700	59,508	56,062
Belgium	7,500	92,000	22,500
Switzerland	5,000	.....	4,200
East Africa	240	.....	.....
South America	145	.....	63,750
South Africa	.....	40,000	.....
Gibraltar	.....	2,500	.....
Denmark	.....	575	.....
Total	72,387,396	158,349,812	21,062,844

The following comparative figures are submitted:

Fiscal year—	Cigarettes manufactured and—		Total.
	Consumed in the Philippine Islands.	Exported to foreign countries.	
	Number.	*Number.*	*Number.*
1906	3,509,038,750	21,062,844	3,530,101,594
1907	3,509,999,575	158,349,812	3,668,349,387
1908	3,774,303,310	72,387,396	3,846,690,706

MATCHES.

There were collected as taxes on domestic and imported matches ₱282,687, as against ₱275,656.91 during the year ended June 30, 1907. This represents a gain of ₱7,030.09, or 2½ per cent. During the year covered by this report the imported matches supplied 31 per cent of the trade and the domestic matches 69 per cent, as compared with 38 per cent for imported and 62 per cent for domestic during the fiscal year 1907, and 42 per cent for imported and 58 per cent for domestic during the fiscal year 1906. The output of the one match factory in the islands increased 15 per cent over the output for the fiscal year 1907, while the quantity of matches imported shows a falling off, as compared with the fiscal year 1907, of 17 per cent.

LICENSE TAXES.

DEALERS IN ALCOHOL AND TOBACCO PRODUCTS.

There were collected as specific license taxes ₱502,183.93, as against ₱511,358.68 during the fiscal year ended June 30, 1907. Of this amount 50 per cent was paid by dealers in distilled and manufactured liquors, 33 per cent by dealers in tobacco products, 9 per cent by dealers in beer, and 8 per cent by manufacturers and peddlers.

MERCHANTS, MANUFACTURERS, AND COMMON CARRIERS.

There were collected as percentage taxes ₱1,305,313.70, as against ₱1,374,245.97 during the fiscal year ended June 30, 1907. Of this amount 93 per cent was paid by merchants, 6 per cent by manufacturers, and 1 per cent by common carriers. The percentage tax collected from common carriers produces comparatively little revenue, for the reason that vessels subject to customs tonnage dues are exempted from this tax, and practically all of the lines of railway are, by the provisions of their franchises, required to pay franchise to the exclusion of this and other taxes.

A falling off in collections from merchants and manufacturers of ₱68,280.91, or 5 per cent, as compared with the fiscal year 1907, is shown. This is no doubt due to the decrease in the purchasing power of the people caused by the shortage in the rice crop

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and the low price of hemp during the year. In the 11 principal rice and hemp producing provinces a decrease in collections under this head of over 17 per cent, as compared with the fiscal year 1907, is shown; while in the principal sugar-producing provinces there was an increase of 5 per cent.

OCCUPATIONS, TRADES, AND PROFESSIONS.

There were collected as specific license taxes ₱417,180.40, as against ₱380,172.72 during the fiscal year ended June 30, 1907. Of this amount 72 per cent was paid by proprietors of cockpits, 14 per cent by lawyers, doctors, civil engineers, and surveyors, and 14 per cent by all other occupation license taxpayers. By the provisions of the internal-revenue law the license-tax collections from owners of cockpits accrued intact to the treasuries of the various municipalities in which they are collected. The provisions of the law authorizing the imposition by municipal councils of additional taxes on cockpits were taken advantage of by 343 municipalities. The rate of the additional license tax thus imposed ranges from ₱2 to ₱5,400 per year. No cockpit licenses were issued in 149 municipalities.

CEDULAS PERSONALES.

There were collected from the sale of cedulas personales, or certificates of registration, ₱3,285,479, as against ₱1,919,705 during the fiscal year 1907. This represents an increase of ₱1,365,774, due principally to the additional road and bridge cedula tax of ₱1, imposed for the calendar year 1908, by the provincial boards of 28 provinces, under the provisions of an amendment to the law.

The cedula is in the nature of a poll tax, and every male person in the islands between 18 and 60 years of age is subject to its payment at the rate of ₱1 if paid during the first four months of the calendar year, and at the rate of ₱2 if paid thereafter; these rates, however, may be doubled in any province by the provincial board, under the provisions of Act No. 1652, Philippine Commission, enacted May 18, 1907. The additional tax thus imposed is for use solely in the construction and repair of roads and bridges. For the calendar year 1908 about 85 per cent of the cedula-paying population has in this manner been made subject to the increased cedula tax. Consular representatives of other countries and certain other persons are specifically exempted by law from the payment of this tax, as are also most of the members of the non-Christian tribes.

There were 34,790, or about 2 per cent, more cedulas sold than during the fiscal year 1907, which is approximately the annual rate of increase in the population. Over 89 per cent of the cedulas sold were without delinquency charges added.

DOCUMENTARY STAMP TAXES.

There were collected from the sale of documentary stamps ₱182,725.40, as against ₱181,136.96 during the fiscal year ended June 30, 1907.

MINES AND MINING CONCESSIONS.

There were collected as percentage taxes on the output of mines held under old Spanish concessions ₱329.28, as against ₱2,140.19 as license taxes and percentage taxes during the fiscal year ended June 30, 1907. Due to an adverse decision to the government by the supreme court of these islands in a case assailing the validity of this tax, the enforcement of that provision of the law imposing the tax was suspended during the early part of 1907.

BANKS AND BANKERS, AND INSURANCE COMPANIES.

There were collected as taxes on deposits, capital employed, and circulation of banks ₱167,892.02, as against ₱141,606.78 during the fiscal year ended June 30, 1907. During the same periods there were collected as taxes on the premiums received by insurance companies ₱19,456.11 and ₱20,599.06, respectively.

FOREST PRODUCTS.

There were collected on timber and minor products removed from the public forests and forest reserves ₱211,570.62, as against ₱191,079.79 (₱26,936.47 of which was paid in cash under the old regulations instead of by the affixture and cancellation of stamps) during the fiscal year 1907, an increase of ₱20,490.83.

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COMPARATIVE FIGURES.

The total collections under Act No. 1189 since its enactment were as follows:

August 1, 1904, to June 30, 1905	₱5,200,383.95
July 1, 1905, to June 30, 1906	8,803,356.91
July 1, 1906, to June 30, 1907	9,432,095.52
July 1, 1907, to June 30, 1908	11,084,044.36

The total collections during the three years and eleven months' operation of the law have been ₱34,519,880.74. Reports of collections during the month of July, 1908, amounting to ₱896,090.11, are now available. The total collection of internal-revenue taxes during four full years' operation of the law, therefore, has been ₱35,415,970.85. Of this amount, 20 per cent was paid on the manufacture and sale of distilled spirits and fermented liquors, 34 per cent on the manufacture and sale of tobacco products, and 46 per cent on the several other businesses, occupations, trades, etc., taxed by the provisions of the law. The internal-revenue law was only partially in operation between August 1 and December 31, 1904.

STAMP, CEDULA, AND OPIUM CERTIFICATE ACCOUNTS.

Internal-revenue and documentary stamps (old and new series), cedulas, and opium-users' certificates have been received and issued in the values shown by the following statement:

Disposition.	Internal-revenue stamps.		Documentary stamps.	
	Old series.	New series.	Old series.	New series.
On hand July 1, 1907	₱4,162,485.47	₱36,450,990.40	₱560,949.04	₱4,074,488.00
Received from Director of Printing, July 1, 1907, to June 30, 1908				
Returned by provincial treasurers	31,039.68	6,795.21	4,347.48	178.46
Total	4,193,525.15	36,457,785.61	565,296.52	4,074,666.46
Issued to provincial treasurers, July 1, 1907, to June 30, 1908	293.98	9,851,558.21	38.36	199,218.46
Balance	4,193,231.17	26,606,227.40	565,258.16	3,875,448.00
Destroyed by auditor's inspectors	4,193,231.17	72.40	565,258.16	
Balance on hand June 30, 1908		26,606,155.00		3,875,448.00

Disposition.	Cedulas.	Opium users' certificates.	Total.
On hand July 1, 1907	₱430,435.00	₱92,190.00	₱45,771,537.91
Received from Director of Printing, July 1, 1907, to June 30, 1908	4,322,000.00	260,000.00	4,582,000.00
Returned by provincial treasurers	192,508.00	170,221.50	405,000.33
Total	4,944,943.00	522,411.50	50,758,628.24
Issued to provincial treasurers, July 1, 1907, to June 30, 1908	3,903,023.00	207,757.50	14,161,889.51
Balance	1,041,920.00	314,654.00	36,596,738.73
Destroyed by auditor's inspectors	64,711.00	313,398.50	5,136,671.23
Balance on hand June 30, 1908	977,209.00	1,255.50	31,460,067.50

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PART 2.

CITY OF MANILA TAXES.[a]

REAL-ESTATE TAX.

The total value of taxable real estate in Manila, as shown by the 1908 tax rolls, is ₱81,943,694, which is an increase of ₱253,909 over that of 1907. In addition to the changes in the general assessments made each five years the tax rolls undergo yearly changes by (1) a reduction of the value of buildings burned or otherwise destroyed, (2) the addition of the value of new buildings erected, (3) additions or reductions made in the assessed values by the board of tax appeals, and (4) correction of erroneous assessments caused by faulty plans.

Work on the assessment map of the city has progressed well during the year. Surveys and plans covering 83 blocks, containing 750 separate parcels of land, were completed.

New buildings were erected during the calendar year 1907 to the value of ₱1,001,745, as compared with ₱1,594,506 during the calendar year 1906 and ₱2,682,606 during the calendar year 1905. There has been a gradual decline in the value of new buildings erected since 1903, during which year it was ₱3,784,320.

The board of tax appeals, in accordance with Act 1793, which provides for yearly meetings, met in January, 1908. Appeals in 26 cases and involving property valued for taxation at ₱760,981 were heard. The valuations of 8 properties were reduced in the total sum of ₱48,109, or less than 1 per cent of the total amount involved in the appeals, and about one-seventeenth of 1 per cent of the total amount of the tax rolls.

Real estate taxes to the amount of ₱1,283,795.34 were collected, as compared with ₱1,302,855 during the fiscal year 1907, a decrease of ₱19,059.66 due to the fact that the delinquent lists were greatly reduced by the fiscal year 1907 collections, leaving a comparatively small delinquent list to be collected during 1908. The collections on account of 1908 tax, during the period from January 1 to June 30, 1908, exceeded those on account of 1907 tax made during the same period of that year by ₱20,422.87.

Two tax sales, for which 145 pieces of property were advertised, were held, as compared with three, covering 340 pieces of property, during the fiscal year 1907. No property has been advertised for sale unless the tax on same was delinquent for two years or more. Nearly all of the properties sold for taxes are redeemed by the owners, and in consequence very few tax deeds have to be issued.

The following statement shows the amount of real-estate tax, penalty, and interest paid during the fiscal year, and for each of the years from 1901 to 1908, inclusive; also the tax satisfied by other means than cash payments:

Due for the calendar year—	Tax satisfied.			
	Tax.	Penalty.	Interest.	Total.
1901	₱3.16	₱0.47	₱1.19	₱4.82
1902	78.44	11.78	27.13	117.35
1903	133.84	18.76	33.61	186.21
1904	633.11	92.70	150.23	876.04
1905	2,148.87	309.39	319.36	2,777.62
1906	43,156.08	6,377.54	4,589.00	54,122.62
1907	444,158.07	14,140.50	3,828.30	462,126.87
1908	760,572.56	1,124.50	1,876.40	763,573.46
Total	1,250,884.13	22,075.64	10,825.22	1,283,784.99

[a] Collected under authority of Act No. 183, Philippine Commission, and various ordinances and resolutions of the Municipal Board of Manila.

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Calendar year—	Credits allowed.				Total collections.
	Act No. 975.	Act No. 1420.	Various.	Total.	
1901					₱4.82
1902					117.35
1903	₱10.16			₱10.16	176.05
1904	18.93			18.93	857.11
1905	16.45			16.45	2,761.17
1906	21.51	₱610.79		632.30	53,490.32
1907	140.37	13.86	₱117.31	271.54	461,855.33
1908	80.55	49.07	376.70	506.32	763,067.14
Total	287.97	673.72	494.01	1,455.70	1,282,329.29
Collected—					
On the redemption of properties forfeited to the city at tax sale, 1905 tax					714.73
On the redemption of properties forfeited to the city at tax sale, 1906 tax					676.07
On the redemption of properties forfeited to the city at tax sale, interest					75.25
Total cash collected					1,283,795.34

The following is a statement of 1908 or current tax collections:

Tax levy, 1½ per cent of 1908 assessments and back taxes	₱1,237,699.26
Less net reductions made in tax rolls on account of erroneous and double assessments	5,416.65
Leaving total 1908 tax for collection	1,232,282.61
Amount of taxes proper satisfied for 1908	760,572.56
Penalties and interest on back taxes taken up for 1901 to 1907	3,000.90
Total	763,573.46
Less tax satisfied by credits allowed under the provisions of act 975, act 1420, and resolutions of the municipal board	506.32
Net cash collections	763,067.14

The following comparative statement shows the amount of delinquent taxes outstanding on June 30, 1906, June 30, 1907, and June 30, 1908:

Year.	On June 30—		
	1906.	1907.	1908
1901	₱410.02	₱15.86	₱15.00
1902	2,367.64	115.02	50.16
1903	5,646.60	207.16	29.94
1904	20,034.29	1,076.36	168.65
1905	64,356.35	3,577.84	1,228.51
1906		53,658.53	5,679.17
1907			44,062.88
Total	92,814.90	58,650.77	51,234.31

From which it will be seen that on June 30, 1908, the amount of delinquent tax was ₱7,416.46 less than on the same date of 1907, and ₱41,580.59 less than on the same date of 1906. The tax rolls for the years 1901 to 1904, inclusive, are practically ready to be closed; the total amount remaining uncollected on these rolls being only ₱263.75, nearly all of which is due on small houses that have been removed or destroyed, which makes it very difficult to enforce payment.

MATADERO.

The collections from this source amounted to ₱176,671.02, as compared with ₱164,962.53 during the fiscal year 1907, an increase of ₱11,708.49.

There were slaughtered and removed from the matadero for consumption 84,950 animals weighing, dressed, 5,889,034 kilos, as compared with 76,145 animals weighing, dressed, 5,498,751 kilos, slaughtered and removed during the fiscal year 1907.

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The expenses incident to operating the matadero during the year were ₱10,000, or 5.7 per cent of the collections.

The following statement shows, by months, the number and kind of animals slaughtered and removed for consumption, the weight of dressed meat, and the fees collected at the rate of 3 centavos per kilo on dressed meat:

Month.	Cattle.			Sheep.		
	No.	Weight.	Collection.	No.	Weight.	Collection.
1907.		*Kilos.*			*Kilos.*	
July	2,098	259,663	₱7,789.89	66	441	₱13.23
August	2,061	251,066	7,531.98	33	342	10.26
September	2,056	248,929	7,467.87	38	299	8.97
October	2,155	267,175	8,015.25	71	394	11.82
November	2,003	228,155	6,844.65	26	169	5.07
December	2,507	282,923	8,487.69	57	437	13.11
1908.						
January	2,512	281,228	8,436.84	19	183	5.49
February	2,324	258,167	7,745.01	32	202	6.06
March	2,168	246,771	7,403.13	15	142	4.26
April	1,937	215,805	6,474.15	11	78	2.34
May	2,277	252,301	7,569.03	3	25	.75
June	2,147	236,036	7,081.08	5	46	1.38
Total	26,245	3,028,219	90,846.57	376	2,758	82.74

Month.	Hogs.		
	No.	Weight.	Collection.
1907.		*Kilos.*	
July	4,950	264,330	₱7,929.90
August	4,773	246,510	7,395.30
September	4,848	240,340	7,210.20
October	4,877	233,399	7,001.97
November	4,853	234,797	7,043.91
December	5,256	257,644	7,729.32
1908.			
January	4,862	242,678	7,280.34
February	4,615	226,477	6,794.31
March	5,102	231,509	6,945.27
April	4,501	208,078	6,242.34
May	4,975	239,768	7,193.04
June	4,717	232,527	6,975.81
Total	58,329	2,858,057	85,741.71

PUBLIC MARKETS.

In the report covering the fiscal year 1907 it was stated: "The market collections should show a material increase during the year 1908, due (1) to the increased stall rentals in effect in Quinta market, which became effective June 15, and (2) to the restrictions regarding the sale of various articles of market produce outside the public markets, as provided by Ordinance No. 93." Due to these causes increases are shown in the collections made in each of the markets during the fiscal year 1908, as compared with the previous year, as follows:

Divisoria	₱24,214.04
Quinta	15,664.40
Arranque	1,965.00
Sampaloc	675.55
Herran	984.10
Anda	151.75
Santa Ana	42.75
Gagalangin	27.40
Pandacan	56.65

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The total market collections amounted to ₱282,493.10, as compared with ₱238,711.46 during the fiscal year 1907, an increase of ₱43,781.64, or 18 per cent.

While the collections show a considerable increase over those for the fiscal year 1907, there will have to be a further increase of 8 per cent over this year's collections to equal the yearly market collections as they were prior to the two years' agitation of market matters which began during the early part of 1906.

Of the two large markets, Divisoria shows an increase of 18 per cent, with none in the rates charged for space; while Quinta shows an increase of 27 per cent, which is less than the percentage of increase in rates as compared with the previous year.

The expense for collecting market taxes was 8 per cent of the total, as compared with 7½ per cent during the fiscal year 1907. The increase is due to the more expensive system in force in Quinta market, where the rate of expense was over 10 per cent, as compared with 5 per cent in the Divisoria market.

The following statement shows the collections, by months, of each market:

Name of market.	July.	August.	September.	October.	November.	December.	Total half year ending December 31, 1907.
Divisoria	₱14,189.00	₱11,733.40	₱13,211.50	₱13,493.15	₱12,139.90	₱14,585.70	₱79,352.65
Quinta	6,278.85	6,165.60	6,054.60	6,392.85	6,153.90	6,332.25	37,378.05
Arranque	2,434.05	2,127.30	2,340.80	2,181.65	2,100.95	2,420.05	13,604.80
Sampaloc	787.80	707.20	721.10	766.50	719.80	849.60	4,552.00
Herran	1,181.70	1,000.20	1,060.40	1,112.05	1,048.85	1,121.50	6,524.70
Anda	101.20	106.00	117.90	136.85	121.65	123.70	707.30
Santa Ana	133.40	127.60	124.30	131.65	124.45	125.15	766.55
Gagalangin	101.75	95.35	91.20	95.80	94.15	96.30	574.55
Pandacan	118.40	98.90	92.80	107.30	102.90	103.05	623.35
Total	25,326.15	22,161.55	23,814.60	24,417.80	22,606.55	25,757.30	144,083.95

Name of market.	January.	February.	March.	April.	May.	June.	Total half year ending June 30, 1908.
Divisoria	₱12,378.85	₱12,024.70	₱14,258.55	₱12,588.50	₱12,090.00	₱13,416.10	₱76,756.70
Quinta	5,925.15	5,613.50	6,176.40	5,889.60	6,006.75	6,012.00	35,623.40
Arranque	2,042.95	2,012.40	2,428.60	2,127.75	2,185.90	2,319.95	13,117.55
Sampaloc	732.40	724.60	857.40	778.40	781.00	809.25	4,683.05
Herran	884.60	873.45	1,043.85	908.55	945.30	984.55	5,640.30
Anda	118.95	111.05	128.50	120.25	127.25	125.95	731.95
Santa Ana	123.30	118.20	130.05	119.75	122.25	118.10	731.65
Gagalangin	88.45	81.70	97.65	90.30	96.70	92.10	546.90
Pandacan	93.30	87.95	104.55	95.55	100.70	95.60	577.65
Total	22,387.95	21,647.55	25,225.55	22,718.65	22,455.85	23,973.60	138,409.15

Name of market.	Total half year ending December 31, 1907.	Total half year ending June 30, 1908.	Total year ending June 30, 1908.
Divisoria	₱79,352.65	₱76,756.70	₱156,109.35
Quinta	37,378.05	35,623.40	73,001.45
Arranque	13,604.80	13,117.55	26,722.35
Sampaloc	4,552.00	4,683.05	9,235.05
Herran	6,524.70	5,640.30	12,165.00
Anda	707.30	731.95	1,439.25
Santa Ana	766.55	731.65	1,498.20
Gagalangin	574.55	546.90	1,121.45
Pandacan	623.35	577.65	1,201.00
Total	144,083.95	138,409.15	282,493.10

MUNICIPAL LICENSES.

Ordinance No. 93, entitled "An ordinance relating to licenses and permits and providing for the regulation of certain trades, occupations, and callings in the city of Manila," enacted by the municipal board on February 11, 1907, became effective April 1, 1907. A full year has therefore been had for the enforcement of this ordinance, with results shown under the various subheads.

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BUSINESS LICENSES AND PERMITS.

The collections from this source amounted to ₱22,949.01, as compared with ₱25,085.59 during the fiscal year 1907, a decrease of ₱2,136.58. This decrease is due to the fact that under the provisions of section 8 of the license ordinance, and with the approval of the municipal board, nearly all licenses and permits were issued for periods of less than a year, for the purpose of having all licenses of the same class expire on a fixed date, to facilitate the making of renewals thereof. While this system of issuing licenses has resulted in a smaller collection during the past year of about ₱8,000 than would have otherwise been collected, the matter will adjust itself during the next year, as all renewals will then be made by the issuance of licenses and permits for periods of one year.

Business licenses and permits were issued, transferred, etc., during the year, as follows:

	Issued.	Transfers.	Duplicates.	Free.	Canceled.	In force June 30, 1908.	In force June 30, 1907.	Increase.
Licenses	1,682	359	4	12	185	1,503	1,466	37
Permits	3,504	.....	18	2	425	3,049	2,493	556
Total	5,186	359	22	14	610	4,552	3,959	593

LIQUOR LICENSES.

The collections from the issue and transfer of the various classes of municipal liquor licenses amounted to ₱162,329.50, as compared with ₱163,178.50 during the fiscal year 1907; a decrease of ₱849. The following statement shows a comparison between liquor licenses issued and transferred during the fiscal years 1907 and 1908:

Class.	1907.			1908.			Increase.	Decrease.
	Issued.	Transferred.	Total.	Issued.	Transferred.	Total.		
Bar:								
First class	80	14	94	76	8	84	.....	10
Second class	76	13	89	72	11	83	.....	6
Restaurant liquor:								
First class	30	8	38	36	9	45	7	.....
Second class	23	3	26	22	2	24	.....	2
Hotel liquor:								
First class	4	.....	4	4	.....	4	.....	.....
Second class	.....	.....	.....	.....	.....	.....	.....	.....
Theater	3	.....	3	35	.....	35	32	.....
Wholesale liquor:								
First class	38	2	40	35	4	39	.....	1
Second class	5	.....	5	2	.....	2	.....	3
Third class	4	.....	4	3	.....	3	.....	1
Grocery liquor	78	4	82	87	12	99	17	.....
Distiller's	8	.....	8	7	.....	7	.....	1
Druggist's	4	.....	4	4	.....	4	.....	.....
Brewer's	1	.....	1	1	.....	1	.....	.....
Native wine	2,737	208	2,945	2,717	237	2,954	9	.....
Total	3,091	252	3,343	3,101	283	3,384	65	24

The increase in the number of theater liquor licenses issued is due to an amendment to the law, in October, 1907, authorizing the issue of these licenses for periods of one week, instead of six months, as was formerly the requirement.

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The following statement shows the number of each class of municipal liquor license in force in the various city districts on June 30, 1908, and a comparison between the total number in force on June 30, 1908, and the same date of last year:

Class.	District.													
	Tondo.	San Nicolas.	Binondo.	Santa Cruz.	Quiapo.	Sampaloc.	San Miguel.	Walled City.	Paco.	Ermita.	Malate.	Santa Ana.	Pandacan.	Total.	Total in force on June 30, 1907.
Bar:															
First class	.....	4	7	10	4	5	....	5	1	....	.....	.....	.....	36	37
Second class	.....	.....	.....	.....	1	33	....	.....	.....	.....	.....	.....	.....	34	37
Restaurant liquor:															
First class	1	1	3	8	2	1	....	1	....	1	.....	.....	.....	18	15
Second class	.....	1	3	4	....	.....	....	1	1	....	.....	.....	.....	10	11
Hotel liquor:															
First class	.....	.....	1	1	....	.....	....	.....	.....	....	.....	.....	.....	2	2
Second class	.....	.....	.....	.....	....	.....	....	.....	.....	....	.....	.....	.....	.....	.....
Theater	.....	.....	.....	1	....	.....	....	.....	.....	....	.....	.....	.....	1	1
Wholesale liquor:															
First class	.....	8	20	1	....	.....	....	4	1	....	.....	.....	.....	34	38
Second class	.....	.....	2	.....	....	.....	....	.....	.....	....	.....	.....	.....	2	4
Third class	.....	.....	1	1	....	.....	....	1	.....	....	.....	.....	.....	3	4
Grocery liquor	.....	19	25	20	....	2	....	6	1	1	2	.....	.....	76	73
Distiller's	2	.....	.....	1	2	.....	1	....	1	....	.....	.....	.....	7	8
Druggist's	.....	.....	3	1	....	.....	....	.....	.....	....	.....	.....	.....	4	4
Brewer's	.....	.....	.....	.....	....	.....	1	.....	.....	....	.....	.....	.....	1	1
Native wine	336	240	86	209	63	83	37	34	88	15	66	22	22	1,301	1,319
Total	339	273	151	257	72	124	39	52	93	17	68	22	22	1,529	1,554

As will be seen from the above statement, there were on June 30, 1908, 25 less licensed liquor establishments in Manila than on the same date of the previous year. On June 30, 1905, there were 113 licensed bars in Manila, as compared with 70 on June 30, 1908; a reduction of 43 in three years.

There are also 21 clubs licensed to sell liquors to members, as compared with 10 on the same date last year.

PUBLIC VEHICLE LICENSES.

The receipts from the issue and transfer of public vehicle licenses amounted to ₱14,340, as compared with ₱14,518.70 during the fiscal year 1907, a decrease of ₱178.70. Efforts have been made, and with some success, to improve the class of public vehicles.

Public vehicle licenses were issued, transferred, etc., as shown in the following statement, in which also appears a comparison with the same data for the fiscal year 1907:

Year.	Issued.	Transferred.	Duplicates.	Canceled.	In force June 30.	Total dispatched.
1907	3,110	211	340	61	3,005	3,661
1908	3,069	237	305	266	3,156	3,611

It will be seen from the above statement that there were 151 more licensed public vehicles on June 30, 1908, than on the same date of last year.

Of the 3,156 licenses in force at the close of the fiscal year, 2,432 were for public carriages, and 724 for public carts and wagons.

Under the classification of business licenses there were in force on June 30, 1908, 29 licenses to conduct livery stables, with an aggregate of 240 vehicles, making the total number of vehicles licensed for passenger traffic in Manila on June 30, 1908, 2,672.

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DOG LICENSES.

The collections from this source amounted to ₱6,250.05, as compared with ₱5,327.11 during the fiscal year 1907; an increase of ₱922.94.

There were 1,701 dog licenses issued as compared with 1,338 during the preceding year. These licenses were all issued to expire on December 31 following date of issue, and license fees corresponding to the fractional part of the year for which issued are collected; hence the apparent discrepancy between the increase in licenses issued and in amount collected.

PEDDLERS' AND OTHER ITINERANTS' LICENSES.

The collections from this source amounted to ₱9,063, as compared with ₱5,956.50 during the fiscal year 1907; an increase of ₱3,106.50, due to the higher license fees provided for by Ordinance No. 93. These licenses are issued for periods of three months, and as the increased license fee was in effect during the entire fiscal year 1908, as compared with only three months during the previous year, an increase in collections was to be expected. During the year there were issued 3,007 peddlers' and 3 jugglers' licenses; which, together with a few transfer fees and fees for duplicate licenses, accounts for the total collection stated above.

PUBLIC-ENTERTAINMENT LICENSES.

Under this head are included only licenses for race meetings and for dance halls, each of which requires a license for each day an entertainment is given. Theater licenses being issued for periods of one year are classified as business licenses.

The license of ₱10 for each race meeting produced ₱270, as compared with ₱570 during the fiscal year 1907, a decrease of ₱300, due to the restriction placed upon the holding of race meetings by the provisions of Act 1537, Philippine Commission. The total amount collected under this head amounted to ₱9,601, as compared with ₱2,784 during the previous year; an increase of ₱6,817, due to the fact that the ordinance imposing the daily license tax upon dance halls was in force only three months during the fiscal year 1907.

VEHICLE EQUIPMENT.

Owing to the fact that the various articles of equipment required for public vehicles were purchased more cheaply, the price to licensees for such equipment was reduced in January, 1908, from ₱1.50 to ₱0.80 for a complete equipment. Notwithstanding this reduction an increase in collections from this source of ₱223.30 is shown. There were collected ₱1,439.10, as compared with ₱1,215.80 during the fiscal year 1907. The increase is due to the sale of new equipment for vehicles already licensed, to replace old, dilapidated articles.

RECAPITULATION.

The following is a recapitulation of collections of municipal licenses and a comparison of the same with those for the year ended June 30, 1907:

Class of license.	Year.		Increase.	Decrease.	Net increase.
	1907.	1908.			
Liquor	₱163,178.50	₱162,329.50	.....	₱849.00	.....
Business	25,085.59	22,949.01	.....	2,136.58	.....
Dog	5,327.11	6,250.05	₱922.94	.....	.....
Peddler	5,956.50	9,063.00	3,106.50	.....	.....
Entertainment	2,784.00	9,601.00	6,817.00	.....	.....
Vehicles	14,518.70	14,340.00	.....	178.70	.....
Vehicle equipment	1,215.80	1,439.10	223.30	.....	.....
Total	218,066.20	225,971.66	11,069.74	3,164.38	₱7,905.46

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REGISTRATION OF LIVE STOCK.

The collections from this source amounted to ₱722.30, as compared with ₱771.40 during the preceding year. There were registered 2,357 animals at a fee of ₱0.20 each, and 2,509 transfers of ownership were recorded at a fee of ₱0.10 each, as compared with 2,484 registrations and 2,746 transfers during the fiscal year 1907.

The present system is a most unsatisfactory one for several reasons, chief among which are: (1) The certificate issued is only a description of the animal, containing nothing by which the holder could prove ownership, although in adjoining provinces, among people ignorant of its real value, the certificate is used as proof of ownership by cattle thieves in disposing of stolen animals; and (2) the fees that may be charged are not sufficient to cover the cost of issuing the certificates. Several recommendations for the repeal of existing law and regulations have been made in communications from this office, as well as in the annual reports during the past few years.

RENTALS OF CITY PROPERTY.

There have been collected as rentals for the use of city property the sum of ₱22,356.03, as compared with ₱19,950.32 during the fiscal year 1907, or an increase of ₱2,405.71.

On June 30, 1908, there were 122 tenants, of which 82 were occupying parts of the public streets, parks, etc.

The city owns nearly 60 parcels of land, scattered throughout the various districts, from which no income is being received. Description and valuation of these properties, together with recommendations for the amount of rentals to be charged, were submitted to the municipal board during the year.

SALES OF CITY LANDS.

During the fiscal year six pieces of city land were sold, for which full payments amounting to ₱19,881.24 were made. Deferred payments amounting to ₱4,280 were made on properties sold during the fiscal year 1907, making the total collection under this head ₱24,161.24, as compared with ₱18,397.63 during the preceding year.

WEIGHTS AND MEASURES.

The weights and measures law, Act No. 1519, Philippine Commission, has been in operation in the city of Manila during the entire fiscal year 1908, as compared with only four months during the fiscal year 1907. There were issued during the year 4,057 licenses covering the testing and sealing of 21,334 scales, measures, etc., for which service fees amounting to ₱8,317.25 were collected. This is an increase of about ₱2,000 over the average yearly collection under the municipal ordinance on this subject in force prior to January 1, 1907.

The collections under this head are also shown under internal-revenue dividends.

PAIL-CONSERVANCY SYSTEM. WATER RENTS, BUILDING PERMITS, BOILER INSPECTION, AND VAULT CLEANING.

The charges under these heads are collected by this office upon assessment rolls and orders of payment prepared and issued by the department of engineering and public works and of sanitation and transportation, city of Manila. Over the assessment of these charges this office has no administrative control, but is charged with the enforcement of collection. Receipts from these sources were as follows:

Pail system	₱58,168.03
Vault cleaning	21,538.00
Building permits	14,994.87
Water rents	234,478.23
Boiler-inspection fees	664.00

Of the above collection increases are shown, as compared with the fiscal year 1907, in collections on account of pail system, ₱9,659.77, and on account of water rents, ₱13,290.25; while losses are shown in vault cleaning, ₱17,661, building permits, ₱319.60, and boiler-inspection fees, ₱548. The large decrease on account of vault cleaning is due to the fact that a large number of delinquent accounts were collected during the fiscal year 1907.

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FEES, FINES, COSTS, ETC.

Costs, fines, fees, etc., were collected or received under the provisions of section 61 of the municipal charter from the several officials charged with their collection. The amounts received from these sources during the year were as follows:

Municipal court collections	₱55,045.37
Sheriff's fees	12,473.95
Justice of peace fines and fees	5,196.60
Pound receipts	5,261.27
City electrician's fees	6,656.15
Cementerio del Norte	12,349.08
Secretary of municipal board fees	45.50
Rent of niches	9,748.60
Burial permits	4,790.10
Total	111,566.62

Of these items, increases and decreases, as compared with the fiscal year 1907 collections, are shown as follows:

Increases:	
Municipal court collections	₱1,713.94
Pound receipts	1,196.13
City electrician's fees	1,160.40
Cementerio del Norte	1,352.58
Secretary of municipal board fees	2.00
Burial permits	778.10
Decreases:	
Sheriff's fees	4,278.70
Justice of peace fines and fees	771.97
Rent of niches	4.00

A net increase of ₱1,148.48 is shown in the total collections under this head, as compared with the fiscal year 1907.

TRANSPORTATION OF MEAT.

Receipts under this head are for services rendered by the city for delivering meat from the slaughterhouse to the various markets in the city, at the rate of ₱0.07 per quarter. There have been collected ₱10,542.84, as compared with ₱8,995.16 during the fiscal year 1907, an increase of ₱1,547.68. While the administration of this system is with this office, the city department of sanitation and transportation defrays all of the expenses incident to the delivery of the meat.

INTERNAL-REVENUE DIVIDENDS.

This source of revenue to the city of Manila during the year comprised:

(1) The ordinary cedula tax collected in the city.

(2) The entire receipts for internal-revenue licenses issued for the maintenance in Manila of theaters, cockpits, museums, concert halls, pawnbrokers, circuses, and billiard rooms.

(3) Manila's share in proportion to its population of the 30 per cent (only 25 per cent up to August 19, 1907) of the revenue apportioned under the provisions of the internal-revenue law for use of provincial and municipal governments.

(4) The entire receipts from the sale of certificates to habitual users of opium in Manila.

(5) The entire receipts collected as fees for the testing and sealing of weights and measures in Manila.

(6) The road and bridge fund, consisting of the additional cedula tax imposed for this purpose, and Manila's share of the 10 per cent of the revenues apportioned for the use of provinces that adopted the provisions of Act No. 1652, Philippine Commission.

The last item did not constitute a part of the dividends during the fiscal year 1907.

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The following is an itemized statement of the revenues from this source during the fiscal year 1908:

(1) Regular cedula tax	₱110,023.00
(2) Receipts from certain license taxes	10,797.50
(3) Manila's share of the 30 per cent apportionment	128,897.03
(4) Receipts from sale of opium certificates	10,155.50
(5) Weights and measures fees	12,562.80
(6) Road and bridge fund:	
(a) Additional cedula tax	52,234.00
(b) Manila's share of the 10 per cent apportionment	6,442.64
Total	331,112.47

A comparison with revenues from this source during the fiscal year 1907 would be of no value, for the reason that the dividends are not all received during the year to which they pertain, nor have they been received with any degree of regularity.

To satisfy requirements by the insular auditor, the items Road and bridge fund and Weights and measures are shown separately in the statement of total collections.

FRANCHISE TAX.

By the provisions of its charter the Manila Electric Railroad and Light Company pays to the city of Manila 2½ per cent of its gross earnings from fares collected and from tickets and electric light and power sold. In consideration of the payment of this franchise tax the company is exempted from the payment of all other taxes except the real-estate tax. This company is the only concern paying franchise taxes to the city. The collections from this source amounted to ₱47,208.23, as compared with ₱40,861.54 during the fiscal year 1907 and ₱28,662.85 during the fiscal year 1906.

MISCELLANEOUS COLLECTIONS.

The following collections, not pertaining to any of the above heads, were made during the year:

Estates of deceased persons	₱2,034.68
Fines imposed by courts of first instance for violations of city ordinances	184.00
Sale of sacks by the department of sanitation and transportation	585.00
Total	2,803.68

TOTAL COLLECTIONS.

The total collection of city taxes, fees, charges, etc., amounted to ₱2,859,318.03, as compared with ₱2,668,033.10 during the fiscal year 1907 and ₱2,465,780.40 during the fiscal year 1906; an increase over the fiscal year 1907 of ₱191,284.93, or over 7 per cent, and over the fiscal year 1906 of ₱393,537.63, or 16 per cent.

The following statement shows the amounts collected from the various sources, together with a comparison of collections during the fiscal year 1907:

Source of revenue.	Fiscal year 1908.		Fiscal year 1907.	
	Receipts.	Per cent of total.	Receipts.	Per cent of total.
Municipal revenues:				
Real-estate tax	₱1,283,795.34	44.899	₱1,302,855.00	48.830
Weights and measures (old law)			715.40	.025
Internal-revenue dividend	272,435.83	9.528	213,435.56	7.997
Miscellaneous	2,034.68	.071	3,358.61	.124
Repayments to appropriation:				
Municipal board—				
Secretary of municipal board fees	45.50	.002	43.50	.002
Bureau of internal revenue, division of assessments and collections—				
Live-stock registration	471.40	.016	496.80	.018
Live-stock transfers	250.90	.009	274.60	.009
Vehicle equipment	1,439.10	.050	1,215.80	.044
Weights and measures	8,317.25	.291		

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Source of revenue.	Fiscal year 1908.		Fiscal year 1907.	
	Receipts.	Per cent of total.	Receipts.	Per cent of total.
Law department:				
Municipal court receipts	₱55,045.37	1.925	₱53,331.43	1.996
Sheriff's fees	12,473.95	.436	16,752.65	.625
Justice of peace fees	5,196.60	.182	5,968.57	.226
Miscellaneous	184.00	.006	.....	.....
Department of engineering and public works:				
Building permits	14,994.87	.524	15,314.47	.571
Water rents	234,478.23	8.201	221,187.98	8.289
Boiler inspections	664.00	.023	1,212.00	.044
Street, bridge, park, and estero fund:				
Sales of city property	24,161.24	.845	18,397.63	.687
Rents, city property	22,356.03	.782	19,950.32	.745
Franchise taxes	47,208.23	1.651	40,861.54	1.530
Rent, telephone poles	1,096.07	.038	921.50	.034
Police department:				
Municipal licenses	224,532.56	7.853	216,850.40	8.124
Miscellaneous	.....	.....	142.64	.005
Fire department:				
City electrician	6,656.15	.233	5,495.75	.257
Department of sanitation and transportation:				
Matadero	176,671.02	6.179	164,962.53	6.180
Markets	[a] 283,150.15	9.903	238,054.41	8.920
Transportation of meat	10,542.84	.369	8,995.16	.335
Pail system	58,168.03	2.034	48,508.26	1.816
Vault cleaning	21,538.00	.753	39,199.00	1.467
Rent of niches	9,748.60	.341	9,752.60	.364
Cementerio del Norte	12,349.08	.432	10,996.50	.411
Pound receipts	5,261.27	.184	4,065.14	.150
Burial funds (bureau of health)	4,790.10	.168	4,012.00	.150
Miscellaneous	585.00	.020	705.35	.025
Road and bridge fund:				
Road and bridge cedulas	52,234.00	1.827	.....	.....
Bureau of internal revenue, 10 per cent dividend	6,442.64	.225	.....	.....
Total	2,859,318.03	100.000	2,668,033.10	100.000
RÉSUMÉ.				
Municipal revenue	1,558,265.85	54.498	1,520,364.57	56.976
Municipal board	45.50	.002	43.50	.002
Division of assessments and collections	10,478.65	.366	1,987.20	.071
Law department	72,899.92	2.549	76,052.65	2.847
Department of engineering and public works	250,137.10	8.748	237,714.45	8.904
Street, bridge, park, and estero fund	94,821.57	3.316	80,130.99	2.996
Police department	224,532.56	7.853	216,993.04	8.129
Fire department	6,656.15	.233	5,495.75	.257
Department of sanitation and transportation	582,804.09	20.383	529,250.95	19.818
Road and bridge fund	58,676.64	2.052	.....	.....
Total	2,859,318.03	100.000	2,668,033.10	100.000

[a] Collected during the fiscal year 1907, but deposited during the fiscal year 1908, ₱657.05.

EXPENSES.

The actual net expenses paid by the city of Manila for the collection of its taxes and other revenues, and for the administration by this office of certain laws and regulations which are not for revenue purposes, were as follows:

Salaries and wages	₱82,000.00
Contingent expenses	19,808.99
Total	101,808.99

This represents a fraction over 3.5 per cent of the total collections, or nearly 1 per cent less than for any previous year except 1907. As compared with the fiscal year 1907, there was an increase in the amount paid by the city of ₱1,808.99, which represents the additional cost for printing entailed by the system in force in the Quinta Market.

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PART 3.

MISCELLANEOUS.

OPIUM TAXES.[a]

The opium law, Act No. 1461, entitled "An act for the purpose of restricting the sale and suppressing the evil resulting from the sale and use of opium until March 1, 1908, when its importation or use for any but medicinal purposes is forbidden by act of Congress," enacted by the Philippine Commission March 8, 1906, and made effective April 1, 1906, remained in operation until October 16, 1907. On October 10, 1907, a new opium law, Act No. 1761, was enacted by the Philippine Commission and made effective October 17, 1907. This law is entitled "An act gradually to restrict and regulate the sale and use of opium pending the ultimate prohibition of the importation of opium into the Philippine Islands in whatever form, except for medicinal purposes, as provided by the act of Congress approved March third, nineteen hundred and five, and prohibiting any person from having the possession of opium, cocaine, or alpha or beta eucaine in any of their several forms, or any derivative or preparation of any of such drugs or substances, except for medicinal purposes, and to repeal Act Numbered Fourteen hundred and sixty-one, and for other purposes." As is shown by its title, the last opium law enacted had for its objects the gradual suppression of the opium evil, the prohibiting of the importation and use of opium, and the use of cocaine, except for medicinal purposes, on and after March 1, 1908. As in the case of the first opium law, this bureau was charged with the enforcement of Act No. 1761 and with the collection of the license and other taxes imposed by its provisions.

HABITUAL USERS' CERTIFICATES.

At the time the new law became effective, October 17, 1907, there had been registered under the old law 12,668 habitual users of opium, of whom 3,147 registered under the new law during October, 2,544 during November, 1,321 during December, 1907; 1,039 during January, and 739 during February, 1908. Under the provisions of the law registrations under Act No. 1761 were valid only during the month within which the registrations were made. The 739 users who registered in February, 1908, were registered five times under Act No. 1761. There were collected from the sale of opium users' certificates during the fiscal year ₱34,429.

LICENSE TAXES.

License taxes were collected, under the provisions of Act No. 1461, from 42 wholesale and 213 retail dealers in opium, to the amount of ₱40,912.48, and, under the provisions of Act No. 1761, from 23 wholesale and 40 retail dealers, to the amount of ₱40,788.97. The total collection from this source was ₱81,701.45. During the month of September 1907, just prior to the enactment of the second opium law, there were 255 licensed opium dealers throughout the islands, while in February, 1908, there were only 37.

TAX ON OPIUM.

From July 1, to October 16, 1907, there were imported 21,980.120 kilos of opium, on which taxes were collected to the amount of ₱58,490.88, and from October 17, 1907, to June 30, 1908, 1,779.622 kilos, on which taxes were collected to the amount of ₱6,288.33. The total amount collected on imported opium was ₱64,779.21. The amount of opium prepared for smoking was 16,550.927 kilos, of which only 1,753.977 kilos were prepared after the taking effect of the last opium law, October 17, 1907. The taxes collected on prepared opium amounted to ₱93,237.23.

HOSPITAL TREATMENT.

Arrangements have been made by the director of health for hospital treatment of those desiring to cure themselves of the opium habit. Treatment was given in Manila, Iloilo, and Cebu. Indigent persons desiring to cure themselves of the habit have been given hospital treatment at the expense of the government, while those able to do so have been required to pay a nominal fee. Two private hospitals have been opened by licensed physicians to furnish treatment for curing the opium habit; and many physicians throughout the islands have given treatment. In the acceptance of offers to compromise for violations of the provisions of the opium laws it has been the rule, in cases of persons found using opium contrary to law, to require the

[a] Collected under authority of Acts Nos. 1461 and 1761, Philippine Commission.

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taking of hospital treatment for a cure of the habit as one of the conditions of the compromise. During the year 617 opium habitues were treated in government and 269 in private hospitals. This does not include those treated in hospitals other than those maintained for this special purpose; nor those treated in their own homes by physicians. According to reports received by this office, many habitues have succeeded in curing themselves of the habit without medical assistance.

Two excellent articles on the evil effects of opium—one prepared by the Archbishop of Manila and one by the director of health—were printed in Spanish and the various native languages and distributed throughout the islands during the year. Valuable assistance has been rendered the government in its crusade against opium by ministers of all denominations.

FINES.

Persons charged with violations of the provisions of the opium laws numbered 777 of whom 207 were convicted by the courts, 328 compromised their cases, 15 were acquitted by the courts, and 227 were pending before the courts at the end of the fiscal year. There were collected during the year as fines imposed by the courts and sums accepted as compromises, ₱34,927.29.

RÉSUMÉ OF COLLECTIONS.

Habitual users' certificates	₱34,429.00
Wholesale dealers' licenses	34,129.97
Retail dealers' licenses	47,571.48
Tax on opium imported	64,779.21
Tax on opium prepared	93,237.23
Fines	34,927.29
Storage charges	2,879.72
Total	311,953.90

SAN LAZARO ESTATE RENTALS.

The following summary of work accomplished during the year in the collection of rentals from the tenants of the San Lazaro estate, is submitted:

Number of tenants July 1, 1907	2,342
Number dropped from rent rolls during the year	1,140
Number added to rent rolls during the year	108
Number of tenants June 30, 1908	1,310
Amount collected	₱54,083.23
Number of tenants delinquent on June 30, 1908	764
Amount delinquent June 30, 1908	₱9,447.75

Of the 1,140 tenants dropped from the rolls, 1,119 were occupying a part of the estate which was transferred by the government to the Archbishop of Manila during the year.

WEIGHTS AND MEASURES.

The weights and measures law (Act No. 1519) became effective on January 1, 1907, but owing to unavoidable delays encountered by the bureaus of science and supply in securing standards for use in testing, the law was in operation in comparatively few provinces during the entire fiscal year 1908. One set of standards has now been furnished each province, but a large number of the provinces received the standards during the past few months and were therefore able to accomplish little or nothing in the enforcement of the law during the fiscal year covered by this report. In some provinces the law was in operation during the entire year; in some only a part of the year; and in others it was not in operation at all. An average of the periods during which it was in operation in the various provinces equals a full operation throughout the islands for a period of one-third of a year.

Standards for the various municipalities have been ordered, and should be available within the next few months.

There were issued 31,248 licenses covering the testing and sealing of 80,364 scales, measures, etc. The fees collected amounted to ₱29,326.35. Each license covers all scales, measures, etc., owned and used by one dealer. From this it may be seen that the average number of scales, measures, etc., used by each dealer is a fraction less than three; the average fees paid by each dealer, 94 centavos, and the average fee for the testing and sealing of each instrument, 36 centavos.

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FOOD AND DRUGS ACT.

The bureaus of customs, health, and internal revenue are charged with the enforcement of the food and drugs law (Act No. 1655), and the rules and regulations issued thereunder. The necessary forms for use in making reports, receipting for samples, etc., have been furnished all internal revenue agents. During the fiscal year thirteen reports of suspected violations were submitted to the director of health. In addition to the reporting of domestic manufacturers for suspected violations of the law, it is the duty of this bureau to see that imported articles of food and drugs are, when repacked and sold, labeled in the same manner as when imported.

Respectfully submitted.

ELLIS CROMWELL,
Acting Collector of Internal Revenue.

The SECRETARY OF FINANCE AND JUSTICE,
Manila, P. I.

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APPENDIX A.

Statement of reported collections under Act No. 1189 during the month of July, 1907 and 1908.

Item.	1908.	1907.
Distilled spirits	₱142,808.30	₱154,417.12
Fermented liquors	12,040.00	13,080.00
Manufactured tobacco	10,457.26	8,112.07
Cigars	14,823.63	16,207.14
Cigarettes	227,567.30	204,734.14
Matches:		
Domestic	19,200.00	12,400.00
Imported	4,703.33	6,831.78
Licenses, dealers in alcohol and tobacco products	59,900.00	60,625.83
Licenses, merchants, manufacturers, and common carriers	184,229.30	216,284.21
Occupation licenses	48,072.96	37,880.25
Mines and mining concessions		34.27
Banks and bankers	67,169.12	62,127.77
Insurance companies	583.14	32.53
Forest products	23,189.07	18,404.63
Documentary stamps	15,698.30	15,735.84
Cedulas	65,646.00	53,126.00
Miscellaneous	2.40	288.38
Total	896,090.11	880,271.96

APPENDIX B.

Statement of city of Manila taxes collected during the month of July, 1907 and 1908.

Item.	1908.	1907.
Real-estate tax	₱13,603.58	₱13,653.17
Matadero receipts	13,631.73	15,733.02
Market receipts	19,036.70	24,478.00
Liquor licenses	10,466.50	14,544.50
Business licenses	916.36	1,905.27
Entertainment licenses	876.00	641.50
Peddlers' licenses	1,869.00	1,854.50
Vehicle licenses	1,597.00	1,783.50
Dog licenses	304.50	194.31
Live-stock registration	49.80	48.60
Live-stock transfers	15.90	26.80
Vehicle equipment	141.20	166.30
Rents, city property	1,361.61	1,242.38
Municipal court fines and fees	4,036.87	4,263.59
Pail system	11,909.96	9,120.47
Vault cleaning	1,127.00	2,289.00
Building permits	1,289.01	1,378.04
Boiler inspections		90.00
Water rents	53,775.10	82,605.52
Road and bridge cedulas	719.00	
Bureau of health fees	1,269.80	1,083.40
Sheriff's fees	633.88	
City electrician's fees	320.27	465.60
Pound receipts	430.94	406.49
Miscellaneous	1,093.81	620.66
Franchise tax	4,180.16	3,558.30
Sales of city land		17,022.24
Secretary of municipal board fees	3.50	
Cementerio del Norte	1,251.00	566.00
Transportation of meat	798.07	878.36
Internal-revenue dividend	27,936.82	41,644.41
Total	174,645.07	212,373.96

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APPENDIX C.

Various collections made during the month of July, 1907 and 1908.

Item.	1908.	1907.
Opium law (Acts Nos. 1461 and 1761, Philippine Commission)	a₱6,180.31	₱46,938.72
San Lazaro estate (Executive order No. 15, March 12, 1906): Rentals	4,086.87	5,981.42
Weights and measures law (Act No. 1519, Philippine Commission): Fees	3,813.35	1,267.90
RÉSUMÉ.		
Internal-revenue taxes	896,090.11	880,271.96
Municipal taxes, city of Manila	174,645.07	212,373.95
Opium collections	6,180.31	46,938.72
San Lazaro estate rentals	4,086.87	5,981.42
Weights and measures, fees	3,813.35	1,267.90
Grand total	1,084,815.71	1,146,833.95

a July, 1908, collections represent fines only.

Recapitulation of taxes collected by the collector of internal revenue for the Philippine Islands during the fiscal year 1908.

Provinces.	Internal-revenue law of 1904, Act No. 1189.	Opium law, Acts Nos. 1461 and 1761.	Weights and measures, Act No. 1519.	Collections made for the city of Manila.	Grand total.
Agusan	₱7,973.20	₱175.00			₱8,148.20
Albay	216,842.44	2,860.40	₱862.15		220,564.99
Ambos Camarines	213,795.65	4,843.86	1,528.05		220,167.56
Antique	53,472.94	587.76	60.30		54,121.00
Bataan	44,592.01	1.00	631.40		45,224.41
Batangas	165,514.10	152.93	1,237.70		166,904.73
Benguet	18,768.73	5.00			18,773.73
Bohol	132,611.76	266.62	106.25		132,984.63
Bulacan	371,709.80	614.50	1,612.30		373,936.60
Cagayan	134,127.21	7,462.99			141,590.20
Capiz	179,649.35	630.68	251.65		180,531.68
Cavite	77,282.69	2,924.01	739.05		80,945.75
Cebu	469,810.42	39,064.50	430.70		509,305.62
Ilocos Norte	92,485.33	593.34	243.80		93,322.47
Ilocos Sur	173,983.35	255.18	388.40		174,626.93
Iloilo	335,595.60	17,829.26	704.30		354,129.16
Isabela	69,702.76	2,184.69			71,887.45
La Laguna	169,040.23	621.45	1,651.05		171,312.73
La Union	78,627.46	299.50	118.55		79,045.51
Lepanto-Bontoc	21,363.88	12.00			21,375.88
Leyte	356,028.34	13,539.44	108.35		369,676.13
Manila	5,391,000.04	171,492.36	8,317.25	₱2,859,318.03	8,430,127.68
Mindoro	19,240.53	49.00			19,289.53
Misamis	104,161.73	1,747.13	202.15		106,111.01
Moro	106,145.63	20,911.82	43.80		127,101.25
Negros Occidental	212,241.37	1,433.19			213,674.56
Negros Oriental	116,848.03	1,363.32			118,211.35
Nueva Ecija	59,946.25	37.50	649.00		60,632.75
Nueva Vizcaya	9,128.29	4.00			9,132.29
Palawan	15,284.33	170.00	16.85		15,471.18
Pampanga	307,984.20	3,247.05	1,557.30		312,788.55
Pangasinan	434,489.17	6,230.86	1,140.85		441,860.88
Rizal	138,588.86	3,054.39	1,612.90		143,256.15
Samar	229,041.37	2,780.21	104.85		231,926.43
Sorsogon	150,019.41	2,452.11	2,371.95		154,843.47
Surigao	68,122.29	1,231.35			69,353.64
Tarlac	88,233.79	182.00	538.35		88,954.14
Tayabas	207,148.59	568.00	2,097.10		209,813.69
Zambales	43,443.23	75.50			43,518.73
Total	11,084,044.36	311,953.90	29,326.35	2,859,318.03	14,284,642.64
Other collections:					
San Lazaro estate rentals				54,083.23	
Sale of public mineral lands				1,047.28	
					55,130.51
Grand total					14,339,773.15

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A number of tables showing in detail the following information have been omitted and are on file in the Bureau of Insular Affairs, War Department:

Receipts in each province from each specific source.
Monthly receipts from each specific source, by provinces.
Miscellaneous forestry collections.
Monthly receipts from opium dealers and users, by provinces.
Monthly receipts, account of weights and measures, by provinces.
Miscellaneous collections, city of Manila.

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REPORT OF THE SECRETARY OF PUBLIC INSTRUCTION.

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REPORT OF THE SECRETARY OF PUBLIC INSTRUCTION.

THE GOVERNMENT OF THE PHILIPPINE ISLANDS,
DEPARTMENT OF PUBLIC INSTRUCTION,
Manila, October 20, 1908.

GENTLEMEN: The secretary of public instruction has the honor to submit to the Philippine Commission his seventh annual report, detailing the work accomplished during the year ended June 30, 1908 (unless otherwise stated herein), by the bureaus under the executive control of the department of public instruction.

From February 12 until August 2, 1908, the writer being on leave in the United States, the department of public instruction was in charge of the honorable the governor-general.

BUREAU OF EDUCATION.

LEGISLATION.

The legislation affecting school work since the rendition of the last report of this department may be summarized as follows:

By Act No. 1679 of the Philippine Commission the sum of ₱3,510,000 was appropriated for current expenses of the bureau of education during the fiscal year 1908. This amount, while falling far short of the needs of the situation, compares favorably with previous appropriations, which were: For the fiscal year 1907, ₱3,182,790 (Acts Nos. 1527 and 1660); for 1906, ₱2,900,000 (Act No. 1416); for 1905, ₱2,417,450 (Act No. 1225); for 1904, ₱1,963,800 (Acts Nos. 807, 1010, 1049, and 1188), and for 1903, ₱3,096,506.66 (Acts Nos. 430, 490, 595, 795, and 1049).

The current appropriation act, No. 1873 of the Philippine Legislature, provides a total of but ₱3,300,000 for the fiscal year 1909. However, in this connection should be considered Act No. 1866, providing ₱75,000 for the payment of salaries of teachers "in barrio schools which, on account of the precarious condition of the municipalities to which they belong, it has not been possible to open, or are about to be closed for like reasons." Also Act No. 1870, appropriating ₱100,000 toward the establishment of certain college of the University of the Philippine Islands, and Act No. 1695, amending the internal-revenue law of 1904 so as to make an additional 5 per cent of those funds available for the free public primary schools in the different municipalities. These three laws add to the current school funds for this fiscal year about ₱550,000, although most of the item of ₱375,000 was available during the last year.

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Act No. 1665 annexed the former province of Romblon to that of Capiz, except the small island of Maestre de Campo, which was brought under the government of the province of Mindoro. As a result, the school division of Romblon was abolished and its territory placed under the control of the school superintendents of Capiz and Mindoro, respectively.

Act No. 1688 appropriated ₱350,000 to aid in the construction of school buildings throughout the islands, with the exception of the Moro Province, under allotment by this office.

Act No. 1706, appropriating for the expenses of the government of the city of Manila, provided ₱285,500 for the city schools.

Act No. 1727, covering public works for the city of Manila, appropriated ₱62,000 for the purchase of a site and the erection thereon of a public school building in the district of Tondo, the sum of ₱50,000 toward this same purpose having been furnished by the insular government, as set forth in the last report of this department.

Act No. 1791, section 4, permits each of the municipalities not having an American public-school teacher, or a school of secondary instruction, to provide for the appointment of one young man and one young woman, whose parents are not able to pay their expenses while attending schools of secondary instruction, to receive limited financial assistance from the municipal school or general funds while they are being trained for positions as public-school teachers at any public secondary school established by this department.

A similar provision is made for the appointment of not to exceed 4 students from any one municipality, to receive, in the Philippine Normal School, Philippine School of Arts and Trades, the Philippine School of Agriculture, or in any other insular school, special training for the teaching of the academic branches, domestic sciences, agriculture, or the arts and trades.

The purpose of this legislation is, of course, to secure in future an adequate supply of competent Filipino teachers, both for academic and technical instruction.

Each student appointed under this law is required to sign an agreement to return to his municipality at the conclusion of his studies, to accept an appointment therein as a teacher, and faithfully to perform the duties of teacher for such salary as may be fixed by competent authority, for a period equal to that during which he or she was supported at the expense of the municipality.

Up to the present time 8 students have been appointed under paragraph 1 of section 4 and 32 under paragraph 2 thereof. Of these, 16 are studying in the Philippine Normal School and 10 in the Philippine School of Arts and Trades, at Manila. The remaining 6 are not at present in attendance at any school.

Act No. 1795 authorizes the employment, subject to the approval of the secretary of public instruction, of regular students in insular industrial and agricultural schools, outside of regular school hours, upon work not connected with the regular school work of such students, with compensation from bureau of education funds not exceeding 30 centavos per hour. All receipts arising from the sale or performance of such work must be deposited to the credit of the bureau.

Like authorization, under similar conditions, is granted for the employment and compensation of regular students in any provincial, industrial, or agricultural school.

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The first act of the Philippine Assembly and of the Philippine Legislature, No. 1801—known as the "Gabaldon Act"—appropriated the sum of ₱1,000,000 for the construction of public school buildings in the barrios, or outlying hamlets, of the islands. One-fourth of this amount was made available on January 1, 1908, and one-fourth on the first day of each of the three next succeeding calendar years.

The important paragraphs of this law read as follows:

(*a*) All barrios belonging to a municipality that shall guarantee a daily attendance in their schools of not less than sixty pupils, duly certified to by the division superintendent of schools and by the supervising teacher of the schools of the municipality, shall have the right or option to participate in the funds appropriated by this act for the purposes indicated: *Provided, however*, That the sum shall not exceed in each case four thousand pesos.

(*b*) The municipality, either by making an appropriation from its funds or by means of voluntary contributions of funds, materials, or labor, shall contribute a sum not less than fifty per centum of the total amount which may be granted in accordance with this act, and shall forward the application of the municipal council through the provincial board to the secretary of public instruction, who shall have charge of and approve the distribution of said funds.

(*c*) The buildings above mentioned shall be erected only upon lands of the exclusive ownership of the municipality, or which shall be donated for such end: *Provided, however*, That the title must be in each case registered in the court of land registration, but the secretary of public instruction may authorize the beginning of the construction work upon the filing of the application for registration: *And provided further*, That the drawing up of the plans and specifications and the execution of the work, and payment for the latter, shall be carried out in accordance with the laws and regulations now in force.

SEC. 2. All unexpended balance, after the completion of any of the works authorized by this act, shall at once be covered into the insular treasury to the credit of this appropriation and shall not be withdrawn from it nor expended except for the purposes herein indicated.

The passage of this law by the newly formed Philippine Assembly, whose representatives are elected by direct vote of the people, has proved of great moral support to the public-school system, and has done much to put at rest statements and arguments to the effect that public education was not really desired by the Filipino people.

Throughout the entire session of the first Philippine Legislature the public-school system has received the warmest support from the Assembly, both as a body and individually, and the effect of this attitude on the part of men of prominence and influence throughout the islands can not but make for the improvement of the schools and the spread of popular education in the English language.

Act No. 1813 of the Philippine Legislature authorizes the governor-general to convey to any province or municipality, either for consideration or as a gift, any land belonging to the insular government, together with the buildings and improvements thereon, on condition that the same shall be used only for public-school purposes.

Act No. 1815 of the Philippine Legislature provides that loans made by the insular government to provinces and municipalities may be canceled, if the province or municipality shall set aside from its general funds a sum not less than the total indebtedness thus canceled, said sum to be expended in the construction of public schools, roads, bridges, or other public works, in the discretion of the provincial boards, subject, however, to the approval of the governor-general. This act repealed Acts Nos. 1560, 1601, 1603, 1622, and part of Act No. 1679, of the Philippine Commission, which had already canceled loans made to the provinces of Cebu, Bataan, La Union, Nueva Ecija, Sorsogon, Capiz, Bantagas, Iloilo, and Romblon, aggregating

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₱327,164.47, on condition that said sums should be expended for the construction and repair of the public schools. As a result of this law, the sum of ₱327,164.47, heretofore available for provincial school construction and equipment, has been taken away, and there have been substituted therefor such amounts as the different provincial boards may decide to give for that purpose. To that extent, therefore, the passage of Act No. 1815 has been a decided loss to the school system.

Act No. 1829 of the Philippine Legislature provides for "popular civico-educational lectures" in the local dialects in the different municipalities and barrios.

Act No. 1857 of the Philippine Legislature authorizes the establishment in Manila of special classes to furnish superior instruction to certain municipal teachers, or to insular teachers serving as such. The teachers are to be those who are considered by the division superintendents to possess the best qualifications to receive such superior instruction, provided that they shall have been teaching for at least two school years. The appointees are required to sign a contract binding themselves to serve, upon the completion of their studies, as municipal or insular teachers for a period of time equal to that during which they received such superior instruction. The number of these teachers' scholarships during the first year was 100, and at least one teacher must be chosen from each province in the islands. The sum of ₱50,000 is appropriated for carrying this law into effect.

Act No. 1858 of the Philippine Legislature amends section 4 (paragraph 2) of Act No. 1791 by providing that municipal teachers, or insular teachers of a municipality, who have held office for two consecutive years, shall be eligible for appointment as special municipal students in the Philippine Normal School or in the Philippine School of Agriculture.

Act No. 1866, known as the "Boiles Act," made available the sum of ₱75,000 for the payment of salaries of teachers in certain barrio schools during the present school year. A number of conditions are prescribed for receiving the benefits of this law. As originally presented to the Assembly, this law provided the sum of ₱400,000 for this purpose, but the amount was reduced, in conference, to the above-mentioned figure.

Act No. 1870 of the Philippine Legislature, known as the "University Bill," authorizes the governor-general to establish in the city of Manila, or at the point most convenient, the University of the Philippines. A board of regents is provided, with power to establish the usual colleges, among which shall be the existing Philippine Medical School. The sum of ₱100,000 is made immediately available for the establishment of such college or colleges as may be determined by the board of regents.

Act No. 1873 of the Philippine Legislature appropriated the sum of ₱3,300,000 for the current expenses of the bureau of education.

In general, the school system has not fared as well in its appropriations for the current fiscal year as was expected. For example, the current appropriation bill for the bureau of education was reduced from ₱3,510,000 for the preceding to ₱3,300,000 for the current year, a loss of ₱210,000; the usual annual appropriation of ₱350,000 to aid in the construction of school buildings throughout the islands was omitted, and the sum of ₱327,164.47 in the form of provincial school funds already established was taken away by Act No. 1815; a total

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loss to the school work of ₱887,164.47 as compared with the last fiscal year.

Against this may be offset the ₱250,000 becoming available under Act No. 1801, the ₱75,000 under Act No. 1866, the ₱50,000 under Act No. 1857, and, possibly, the ₱100,000 appropriated for the University of the Philippines by Act No. 1870—a total of ₱475,000, although the funds appropriated by Acts Nos. 1857 and 1870 are for entirely new projects. At all events, the educational system has suffered a drop in its appropriations of ₱412,164.47, compared with the preceding year.

Insular Aid to School Construction.

Up to September 9 last allotments for school construction work in the different provinces in the islands have been made by this office from the funds appropriated by Acts Nos. 1275, 1580, and 1688, as follows:

Province.	Apportionment by—			Total.
	Act No. 1275.	Act No. 1580.	Act No. 1688.	
Amount appropriated	₱350,000.00	₱300,000.00	₱350,000.00	₱1,000,000.00
Manila	[a] 6,344.25	[b] 60,000.00	.....	[a b] 66,344.25
La Laguna	10,000.00	6,000.00	[c] 45,000.00	[c] 61,000.00
Pangasinan	8,000.00	35,000.00	15,000.00	58,000.00
Bulacan	10,000.00	10,000.00	32,378.74	52,378.74
Leyte	10,000.00	5,000.00	31,000.00	46,000.00
Iloilo	32,000.00	.....	12,500.00	44,500.00
Pampanga	12,000.00	16,000.00	16,000.00	44,000.00
Tayabas	12,775.00	15,000.00	12,000.00	39,775.00
Albay	8,000.00	.....	28,000.00	36,000.00
Misamis	8,000.00	18,000.00	10,000.00	36,000.00
Cebu	12,000.00	22,500.00	.....	34,500.00
Surigao	16,000.00	5,000.00	13,000.00	34,000.00
Rizal	9,252.75	15,000.00	6,000.00	30,252.75
Occidental Negros	8,000.00	.....	22,000.00	30,000.00
Camarines	8,000.00	.....	20,000.00	28,000.00
Ilocos Norte	.....	17,000.00	10,000.00	27,000.00
La Union	12,000.00	6,000.00	8,000.00	26,000.00
Benguet	6,000.00	.....	17,800.00	23,800.00
Cagayan	8,000.00	12,000.00	1,500.00	21,500.00
Sorsogon	20,000.00	.....	.....	20,000.00
Cavite	9,628.00	10,000.00	.....	19,628.00
Capiz	8,000.00	.....	11,590.00	19,590.00
Samar	8,000.00	8,000.00	3,000.00	19,000.00
Tarlac	7,000.00	12,000.00	.....	19,000.00
Zambales	8,000.00	1,000.00	10,000.00	19,000.00
Mindoro	5,000.00	12,500.00	.....	17,500.00
Ilocos Sur	17,000.00	.....	.....	17,000.00
Nueva Vizcaya	6,000.00	5,000.00	5,000.00	16,000.00
Isabela	10,000.00	.....	4,000.00	14,000.00
Antique	6,000.00	.....	7,500.00	13,500.00
Batangas	5,000.00	8,000.00	.....	13,000.00
Bohol	12,000.00	.....	.....	12,000.00
Oriental Negros	6,000.00	.....	5,000.00	11,000.00
Nueva Ecija	8,000.00	1,000.00	.....	9,000.00
Romblon	8,000.00	.....	.....	8,000.00
Bataan	6,000.00	.....	.....	6,000.00
Palawan	4,000.00	.....	1,200.00	5,200.00
Total	350,000.00	300,000.00	347,468.74	997,468.74
Balance	.....	.....	2,531.26	2,531.26

[a] Expended on the insular trade school.
[b] ₱10,000 allotted for an agricultural school, vicinity of Manila.
[c] ₱45,000 of this amount is set aside for the insular agricultural school.

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This leaves a balance on hand still to be allotted of but ₱2,531.26. These allotments have been made to the several provinces above mentioned on condition that they shall furnish certain sums of money, appropriated either from their revenues and those of the municipal governments or raised by voluntary contributions by the people, or by both methods, in addition to providing in every instance suitable sites for the construction of the school buildings. The sums required to be furnished by the provinces for this purpose, pursuant to the allotments above mentioned, amount to ₱945,295.70.

Classifying the amounts allotted as aforesaid according to the kinds of school buildings to be constructed therefrom, it is found that there has been provided for the construction of—

Provincial high-school buildings	₱330,275.00
Intermediate school	279,628.00
Schools of arts and trades	224,612.99
Agricultural schools	69,500.00
Domestic science and dormitories	64,200.00
A school of fisheries	23,252.75
A school of pottery	6,000.00
Total allotted	997,468.74

School Divisions.

Public educational work in the islands is now performed under the bureau of education, with a central office located in Manila, having 36 divisions, each in charge of a division superintendent, embracing in all 460 school districts, each in charge of a supervising teacher. The union of the provinces of Benguet and Bontoc in the "mountain (school) division," and of the province of Romblon with that of Capiz, reduces the number of school divisions to 36—not counting the Moro Province. The total number of schools in operation during the past year was as follows:

Kinds of schools.	School year.		Increase.
	1906–7.	1907–8.	
Primary schools	3,435	3,701	266
Intermediate schools	162	193	31
Arts and trades	32	35	3
Agricultural	5	12	7
Domestic science	17	30	13
Provincial high schools	36	38	2
Total	3,687	4,009	322

NOTE.—For the purposes of the above classification each municipal school giving instruction both to pupils of intermediate and of primary grades is credited both to the number of primary and of intermediate schools.

Provinces in which there are special instructors in agriculture who give their entire time to this branch are credited with one agricultural school for each of such instructors. The same basis of classification with respect to domestic science schools has been used. In some cases the domestic science, the agricultural, and the arts and trades departments are divisions of the provincial school, but in the above classification, for the sake of clearness, they have been listed separately.

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School-Construction Work.

Since the creation of the present bureau of education there have been constructed in these islands a total of 2,696 schoolhouses of all kinds. In the year 1903 the number constructed was 479; in 1904, 754; in 1905, 464; in 1906, 298; in 1907, 269; in 1908, 432. According to the best information obtainable there were 726 public schools in existence at the time of the American occupation of these islands. The school-construction work carried on during the years 1907 and 1908 and that at present going on is of the most permanent and substantial character, with the exception of certain municipal primary schools, which are built by the municipalities, and are, in many instances, constructed of light materials. During the last two years there were either built or purchased by the government 2 provincial high, 22 domestic science, 10 agricultural, 18 of arts and trades, 101 intermediate, and 548 primary schools, a total of 701.

On June 30, 1908, the following school buildings were either contemplated or in course of construction throughout the islands:

Intermediate schools	24
Arts and trade schools	18
Provincial high schools	11
Domestic science buildings	6
Agricultural buildings	5
Dormitories	4
Primary central schools	1
Group of industrial buildings	1
Total	70

Teaching Force.

The teaching force maintained directly by the insular government is approximately 1,572, of whom 877 are American and 695 Filipino insular teachers. This is an increase of 51 American and 240 Filipino insular teachers over the force so provided on June 30, 1907.

The following table gives the salaries paid, the number of Filipino insular teachers allowed at each salary, and the number of regular and temporary teachers receiving the same:

Salaries.	Allowed by appropriation.	Employed.		Salaries.	Allowed by appropriation.	Employed.	
		Regular.	Temporary.			Regular.	Temporary.
₱96			1	₱540		1	6
120			1	600	230	97	45
144			2	720	40	67	13
180			2	840	30	30	21
192			1	900			1
240			15	960	34	19	18
300			19	1,080	20	5	2
324			1	1,200	14	10	1
360		11	59				
420		6	38	Total	500	331	364
480	132	85	118				

Note.—Data as of date of September 9, 1908.

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The following table shows the salaries paid, the number of American insular teachers (not including superintendents) allowed at each salary, and the regular and temporary teachers in the service:

Salaries.	Allowed by appropriation.	Employed.		Salaries.	Allowed by appropriation.	Employed.	
		Regular.	Temporary.			Regular.	Temporary.
₱600			1	₱2,600	140	135	
960			1	2,700		2	
1,200			2	2,750		1	
1,320		1		2,784		18	
1,440		1	4	2,800	150	135	1
1,680			1	3,000	100	76	
1,800		9	52	3,200	50	47	
1,992		19		3,600	12	12	1
2,000	52	35	14	4,000	1	1	
2,200		3	3				
2,388		18		Total	795	761	116
2,400	290	248	29				

It will be noted that while positions for only 795 American and 500 Filipino insular teachers were directly authorized, 877 of the former and 695 of the latter were actually employed on the above date. This is explained by the fact that temporary vacancies in positions authorized have produced a balance from which the salaries of additional teachers may be paid.

The average annual salary of Filipino insular teachers last year was ₱543.66, and of municipal teachers only ₱214.66. The average annual salary paid to American teachers was ₱2,509.96.

Number of Schools.

During the past school year there were 1,055 central municipal and 2,646 barrio schools, as compared with 1,020 and 2,415, respectively, at the time of the last annual report of this department, an increase of 35 central municipal and 231 barrio schools.

The total number of schools now in operation in the islands is 4,009, according to the definition previously given in this report, as compared with 3,687 at the time of the last annual report—an increase of 322 schools of all kinds.

During the past school year 266 additional primary, 2 secondary, 31 intermediate, 3 arts and trades, 7 agricultural, and 13 domestic science schools were opened.

Enrollment and Attendance.

School year.	Total enrollment.	Average total enrollment, by month.					Pupils belonging.	Average daily attendance.	Percentage of attendance.
		Boys.		Girls.		Total.			
		Number.	Per cent.	Number.	Per cent.				
1907	479,978	214,960	62	131,285	38	346,245	316,000	269,006	85
1908	486,676	212,273	63	126,970	37	339,243	320,560	270,732	85

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The foregoing statement does not, of course, include the Moro Province. By "pupils belonging" is meant the pupils who remain on the rolls throughout the year, as distinguished from those whose attendance continues only during a portion thereof.

The percentage of attendance was generally good, the highest being in the city of Manila, 96 per cent, or a gain of 2 per cent over last year.

The lowest percentages of attendance, 70 and 71, were found in the provinces of Misamis and Albay, respectively.

In the primary, or municipal schools, the average total enrollment by months during the last school year was 323,327, as against 332,634 for the preceding year, or a decrease of 9,307.

As was stated in the last report of this department—

> Further enrollment under present conditions is practically out of the question owing to the fact that the municipalities throughout the islands have not sufficient funds to employ a larger number of teachers or to construct additional primary schools in the towns and barrios; and inasmuch as the present force of municipal or primary teachers has as large a number of pupils as it can successfully manage, further increase in enrollment in primary work must await the coming of additional funds.

While Acts Nos. 1801 and 1866, one appropriating money for the construction of barrio schools and the other for the payment of barrio teachers in certain instances, will prove of great benefit, there was not time for their effects to be felt during the past school year.

Proposed Congressional Legislation.

During the Sixtieth Congress, first session, there was introduced by Mr. Cooper, of Wisconsin, House bill No. 394, providing that the government of the Philippine Islands shall set aside 40 per cent of all sales hereafter made of the public lands thereof, to constitute a perpetual fund in the treasury of said islands, to be invested in bonds of the United States, or of any of the States, or in some other safe bonds, the interest on which shall be inviolably appropriated by the government of the Philippine Islands and extended only by lawful appropriation for the purchase of sites and construction of buildings for public primary schools and for public industrial schools therein, and for the support and maintenance of such schools, including the pay of teachers.

The bill further provides that the government shall set aside also an additional 15 per cent of the proceeds of all such sales, which shall constitute a perpetual fund in the treasury of said islands, to be invested in the manner hereinbefore mentioned, the interest on which shall be inviolably appropriated by the government of the Philippine Islands, and expended only by lawful appropriation for the purchase of sites and the construction of buildings for public schools for higher education therein, and for the support and maintenance of such schools, including the pay of teachers, with the proviso that said legislation shall not apply to the proceeds of the sales of the lands known as the "friar lands."

The revenues so far derived from such sales have been inconsiderable, the amount being ₱3,461.60 (sale of coal lands) for the fiscal year 1906; ₱17,607.87 (sale of coal and agricultural lands) for the fiscal year 1907; and ₱7,446.39 for the fiscal year 1908; a total so far of ₱28,515.86.

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In the course of time, however, if this bill shall become a law, a permanent school fund will be established, which should be of substantial aid to our system of public education.

This department strongly urges that a recommendation for the prompt passage of this bill be included by the Philippine Commission in its report for this year.

Public Educational Center.

The passage of the "University Bill," the growth of the Philippine Normal School and the Philippine School of Arts and Trades, and the need of ceding immediately a part of the "Exposition" grounds and buildings in Manila, now used for normal-school purposes, to permit the construction of the new General Hospital, all make urgently necessary the selection and reservation, for public educational purposes, of a suitable tract of land in Manila, centrally located, on which may be established the higher educational buildings of the Philippine government. Within a very short time the normal school will be practically crowded off its present site, the trade school, which is inadequately and temporarily housed on certain municipal property, will be compelled to vacate, while the early establishment of one or more colleges of the proposed university only increases the need of land provision. The time has now arrived when the reservation or purchase of a suitable educational site may no longer be postponed, and to that end this department will present the necessary bill for enactment by the next Legislature.

Five-Year Adoption of Schoolbooks.

In February of this year, this department authorized the adoption of all regular text-books for the public schools for a period of five years instead of each year. The advantages of the five-year adoption plan are twofold, to wit, the insurance of uniformity in the use of text-books throughout the entire archipelago and the decided reduction in price obtained on the new basis. Up to the present time there have often been several different text-books on the same subject in use in the same grades in different parts of the islands. This lack of uniformity will now disappear. Furthermore, it was the practice of each of the competing American publishing houses to send here one or more representatives each fall to make their bids and proposals, and the cost of these journeys was naturally an item to be paid for by the government in purchasing books.

The five-year adoption plan has produced the following reductions in prices to the government, so far as the same has been put into effect at the present time:

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Books.	Prices (United States currency).	
	Contract.	Regular.
Primer, Philippine Chart, Coleman	$0.12	$0.13½
First Year Book, Fee	.21½	.26½
Arithmetic, Primary, Bonsall, Parts I and II, revised	.21	.22
Arithmetic, Primary, Bonsall-Mercer, Part III, revised	.22	.27
First Primary Language, Reimold	.21	.21
Second Primary Language, Reimold	.22	New.
Reader, Insular First, Gibbs (not purchased)	.21½	.23
Reader, Insular Second, Gibbs	.23½	.25
Reader, Insular Third, revised, Gibbs	.28	.28
Geography Primer, Insular, with corrections, Gibbs	.23½	.25
Philippine Writing, Book I, Heath	.02½	.03
Philippine Writing, Book II, Heath	.02½	.03
Philippine Writing, Book III, Heath	.02½	.03
Philippine Writing, Book IV, business form, Heath	.06	New.
Drawing Book I, Hilts	.11½	.12083
Drawing Book II, Hilts	.11½	.12083
Drawing Book III, Hilts	.11½	.15

The above contract prices were secured as the result of competitive bids, with the exception of those of the American Book Company for the Insular Second Reader and the Insular Geography Primer. In its competitive bids the American Book Company submitted the same prices at which purchase was made for the previous year, but subsequently the secretary of public instruction was able to secure the reduced figures given above.

As regards the Gibbs Insular Third Reader, while the contract price remains the same as the regular price previously paid, the book is to be considerably added to by the addition of new material, amounting to about 24 pages. Inasmuch as the company has not been able to make the revision for the order for this year the price of the book has been reduced 1 cent each, or to 27 cents, United States currency.

The savings made so far this year in purchases of schoolbooks made on the five-year adoption plan, have exceeded ₱20,000. The details are as follows:

	United States currency.
55,000 Primer, Philippine Chart, Coleman, at 1¼ cents	$687.50
35,000 First Year Book, Fee, at 5 cents	1,750.00
5,000 Arithmetic, Primary, Bonsall, Parts I and II, revised, at 1 cent	50.00
26,000 Arithmetic, Primary, Bonsall-Mercer, Part III, revised, at 5 cents	1,300.00
20,000 First Primary Language, Reimold	
38,000 Second Primary Language, Reimold, at 10 cents	3,800.00
Reader, Insular First, Gibbs (not purchased).	
16,000 Reader, Insular Second, Gibbs, at ½ cent	240.00
6,000 Reader, Insular Third, revised, Gibbs	
35,000 Geography, Primer, Insular, with corrections, Gibbs, at 1½ cents	525.00
100,000 Philippine Writing, Book I, Heath, at ½ cent	500.00
50,000 Philippine Writing, Book II, Heath, at ½ cent	250.00
20,000 Philippine Writing Book III, Heath, at ½ cent	100.00
20,000 Philippine Writing, Book IV, Heath, at 1 cent	200.00
25,000 Drawing Book I, Hilts, at 0.833 cent	208.25
25,000 Drawing Book II, Hilts, at 0.833 cent	208.25
10,000 Drawing Book III, Hilts, at 3¾ cents	375.00
Total	10,194.00

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It is expected that in the next five years the actual savings to the Philippine government, as a result of this plan, will be at least ₱100,000, and probably ₱130,000, without estimating the value of having uniformity in the text-books throughout the islands.

Compulsory Attendance.

The secretary of public instruction has received a number of petitions and suggestions looking toward the enactment of a compulsory school-attendance law in these islands. Up to the present time, at least, no good reason has been advanced for taking such a step. It is doubtless true that in some districts the school attendance is not enthusiastic, nor even encouraging, owing to a variety of causes, more or less justified; but, on the other hand, in the immense majority of cases, the attendance is so good, the enthusiasm of the pupils so great, their discipline so irreproachable, and the sacrifice of their parents, in many instances, so admirable, that a compulsory-attendance law, in addition to being a "dead letter," would be an unmerited reflection on the desire of the Filipino parent and child for education and enlightenment. The sins of the few should not be visited on the many, yet such would be the ethical effect of that law. Beyond this is the underlying practical objection to such a law, in that our schools are already crowded to their utmost capacity, and every nerve is being strained to build more schools and pay more teachers.

It is the recommendation of this department that no compulsory-attendance law be enacted at the present time.

Filipino Students in the United States.

The current appropriation bill for the bureau of education provides for the maintenance in the United States of 130 Filipino students. Up to the present time some 60 students have returned to these islands upon the expiration of their terms of appointment, and all have received government appointments, as follows:

Teachers	40
Clerks	11
Constabulary subinspectors	2
Draftsmen	2
Pharmacist	1
Court interpreter	1
Agricultural foreman	1
Computer	1
Private secretary	1
Total	60

The services of the majority of these appointees have been characterized as either "good" or "superior," 7 of them being reported upon as "fair" and 5 as "poor."

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During this year 43 more students are expected to return, 4 of them being young women. The course taken by these young men and women have been as follows:

Civil engineering	11
Mechanical engineering	3
Chemical engineering	1
Agriculture	11
Teaching	6
Medicine	4
Domestic science	2
Architecture	1
Law	2
Forestry	1
Pharmacy	1
Total	43

In view of the establishment and successful operation of the Philippine Medical School it is believed that no more appointments of students to take a medical course in the United States should be made, unless the circumstances are exceptional. It is a question, also, whether some restriction should not be imposed in future on the class of studies to be pursued under government scholarships. At all events, applicants desiring to take engineering, agricultural, forestry, and domestic science courses should be specially favored and encouraged.

Philippine Normal School.

The work of this important institution has continued up to its usual high standard. In addition to the regular students, 16 appointees, as heretofore mentioned in this report, are filling municipal scholarships in this school.

The nurses' training course has proved most successful, so much so that the number of government scholarships for the present academic year has been increased to 30, while 12 other scholarships have been provided through private generosity.

The credit for the initiation and successful operation of this special branch of education belongs largely to Miss Mary E. Coleman, who, since 1903, has been in charge of the young women's dormitory. The student nurses work under the direct supervision of an American trained nurse, from whom they receive instruction in physiology, hygiene, and the theory of nursing. They receive lessons in English and cooking in the regular classes of the normal school, and attend one of the hospitals of Manila for practical experience in nursing.

During the recent cholera outbreak in Manila 6 of the second-year student nurses, stationed at the Civil Hospital, volunteered for duty as cholera nurses in the San Lazaro Hospital, where they served with their teachers, Misses Layton and Cretcher. Their names are: Miss Ramona Cabrera, from Cebu Province; Miss Baldomera Garcia, from Albay Province; Miss Irene de la Llagas, of Ambos Camarines; Miss Hermenegilda Flores, from Oriental Negros; Miss Apolonia Salvador, from Ilocos Sur; and Miss Modesta Jamis, from Zambales. Miss Marcelina Nepomuceno, of the province of Pampanga, volunteered for this same duty, but her services were required in the operating room of the Civil Hospital. These young women have had one year's study in the nurses' training course, and since last June

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have been regularly on duty five hours daily at the Civil Hospital, in addition to their regular class work at the normal school. They are all graduates from the intermediate schools of their respective provinces.

Their action in volunteering for and performing this dangerous and most disagreeable duty, after but one year's training, is a tribute to their character, their courage, and their forgetfulness of self, which no words of praise can adequately reward.

The success of the nurses' training course demonstrates how little reliance can be placed on prognostications of failure based merely on the newness and strangeness of an idea, when its execution is placed in skillful and tactful hands. If ever a plan was foredoomed to defeat because of its alleged repugnance to the customs and training of the Filipino young woman it was this; yet a more noble, self-sacrificing, and useful career for hundreds of young women in these islands would be difficult to find. In this work the Filipino woman will have full opportunity to display that tenderness and affection for the sick for which she is justly famed, and the graduates of this course, whether they make "trained nursing" their life's career or not, can not fail to be, in their homes, a source of aid and confort to their families and their neighbors in times of illness and suffering.

In regard to this course, Superintendent Beattie, of the Philippine Normal School, says:

> This class of work is an innovation in Filipino life, and many doubts were expressed as to the ultimate success of the venture. Thanks, however, to the ability of Miss Coleman, the originator of the scheme, and to the tact and capability of Miss Layton, the nurse in charge of the girls, the experiment may be pronounced a complete success. The young women have displayed great interest in their work along with real aptitude for it, and all have made satisfactory progress. They are now in active demand as student assistants in various hospitals in Manila.

Financial Support of the Schools.

In the last report of this department the support of the schools from the land tax was discussed at length and the statement was made that the amount provided from that source was wholly inadequate to meet the needs of the primary schools. That statement is equally true at the present writing. The action of the Philippine Assembly in passing the "Boiles bill," which originally provided ₱400,000 for the payment of barrio school-teachers, and in providing in the current appropriation bill of the bureau of education ₱500,000 to be apportioned among the municipalities of the islands for primary school work, was a sufficient recognition by that body of the utter inadequacy of existing provisions for the financing of the primary schools. Had those two bills been passed by the Philippine Legisture ₱900,000 additional would have become available for school work, and substantial progress in enrollment and increase of schools would have resulted. Unfortunately, also, the usual annual appropriation of ₱350,000 for the construction of insular and provincial schools was omitted. As matters now stand, the fundamental educational work in the islands represented by the municipal schools must perforce remain in statu quo until such time as the Legislature shall find it practicable to give further financial support.

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The problem has largely resolved itself into the dollar mark, and all material progress in the near future must be measured by that rule.

GOVERNMENT SUPERVISION OF PRIVATE SCHOOLS.

During the past year several bills were introduced into the Assembly looking toward the compulsory supervision by the government of private educational institutions. This department does not favor such a step, but believes that section 168 of the corporation law (No. 1459 of the Philippine Commission) accomplished substantially the results desired, in a more practicable manner, and without engendering the opposition and friction which would undoubtedly follow the passage of a compulsory supervision law.

Pursuant to said section 168, the acting secretary of public instruction has empowered the "Ateneo de Manila" and the "Colegio de la Asuncion" to issue certain degrees, diplomas, and certificates under governmental authority, and applications have been received by this department from a large number of private educational institutions to obtain such governmental supervision of their curricula, methods of teaching, text-books, and equipment as will enable them to receive similar governmental approval.

PLAN OF SECONDARY EDUCATION.

A plan of secondary instruction has now been prepared and will shortly be authorized by this department. In general, this plan provides for a secondary course of six years' duration, preceded by a training in the ordinary elementary branches equivalent to, although not necessarily identical with, that given in the public primary and intermediate schools of these islands, whose 2 courses—primary and intermediate—embrace 7 grades, normally of 1 school year of forty weeks for each grade, although the requisite instruction may be given in six years. The minimum requirements of secondary instruction necessary to obtain governmental approval will be not less than 4 units for each year, making a minimum total of 24 units for the six-year course. Of these 24 units, a certain number will be definitely prescribed by this department and the remainder left as electives, with certain general limitations and restrictions. In this connection it may be stated that in private educational institutions, wherein the ordinary class instruction is given in the Spanish language, a satisfactory amount of instruction in the English language and in English literature will be required before granting governmental approval to said institutions.

NUMBER OF YEARS OF STUDY.

The above-stated requirements involve a course of studies lasting at least twelve years in order to secure the degree of bachelor of arts with governmental approval. This, of course, is a decided departure from the requirements of the governmental plan of instruction under the Spanish régime which exacted but four years' primary education, generally referred to as "primera enseñanza," and five years of secondary instruction, known as "segunda enseñanza," making a total

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of nine years' study leading to the degree of "bachiller en artes." This was under the decree issued by the Spanish Government of the Philippines in the year 1871.

It has been contended by the heads of various private educational institutions here that to increase materially the number of years of study required to obtain the degree of bachelor of arts with governmental approval would, under the conditions existing in the Philippine Islands and considering the habits and customs of the people, prevent a large number of students from obtaining said degree. The principal argument along these lines seems to have been that the Filipino youth develops at a much earlier age than is the case in the United States and Europe, and that at the age of 18, or even younger, he is supposed to be ready to take up his purely professional studies, such as, for instance, law or medicine, which courses, according to the same Spanish governmental plan of education, required ordinarily six years of professional studies; that as a result of this situation the student would not be able to enter upon the practice of his profession before reaching the age of 23 or 24 On the other hand, it may be noted that in the United States, as a rule, the requirements leading to the degree of bachelor of arts may be said to cover sixteen years of school work, made up as follows: Twelve years of primary and secondary work, in grammar and high schools, and four years of collegiate work. This plan, however, appears to be undergoing very general modification in the United States, as is indicated by the fact that most colleges are now offering professional studies during the last two years of the bachelor of arts course, thereby shortening to that extent the amount of time which it is necessary to devote to the acquirement of a professional degree.

PRACTICE IN EUROPE AND UNITED STATES.

On the continent of Europe the requirements as to the time to be devoted to the securing of a liberal education appear to be somewhat less than in the United States. The number of years needed for graduation from primary and secondary instruction in such typical institutions as the German Gymnasium or the French Lycée being twelve years, three of which are usually passed in a primary school and the succeeding nine in schools of higher instruction (Gymnasium or Lycée). In spite of the fact that the students of the Philippine Islands are being attracted more and more to the United States as a field for postgraduate and professional study, it is believed that the facts that the continental standard requires, in a general way, only twelve years, and that in the United States a movement seems to be in progress tending to shorten the period necessary for cultural studies, are sufficient reasons for making the requirement in the Philippine Islands for receiving the degree of bachelor of arts lower than at present in the United States, and that this situation justifies the government here in authorizing the granting of the degree of bachelor of arts to students who complete twelve years of instruction, primary and secondary, in the manner that has been hereinbefore described.

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Baguio Vacation Assembly.

The annual teachers' vacation assembly was held last spring at Baguio, Benguet. The site chosen for the assembly camp was that of the newly erected Baguio Industrial School, about 4,750 feet above sea level. Tenting accommodations were provided for 360 teachers, water under pressure was carried to all parts of the camp, and bathing and sanitary arrangements were made as complete as practicable. The grounds were cleared, and a graded road and paths constructed. The school buildings already on the site and two large tents were utilized for class-room purposes. Special transportation rates over the railroad and stage lines were obtained for teachers and other employees of the bureau of education. The assembly lasted from April 20 until May 15. Four well-known lecturers from the United States were present and gave courses. There were also a number of extra courses and special lectures given by educators in these islands. The educational work of the assembly is believed to have been equal in quality to that given by any university summer school in the United States.

The cost of this assembly was ₱53,774.97, included in which is property of permanent value to the amount of ₱41,000. The estimated future cost of holding the vacation assembly in Baguio is ₱12,000 annually, whereas the advantages to the teaching force would be difficult to overestimate. In this connection, the director of education says:

> The advantages to the teaching force of a summer assembly of this kind are believed to be inestimable. Such gatherings bring about a personal acquaintance between directors, superintendents, and teachers that dissipates the misunderstandings that arise through the peculiar organization of the service; they promote professional feeling and loyalty to the service; and they greatly stimulate the intellectual interests of all who attend. The opportunity offered by such an annual gathering for conference on questions related to educational, political, and social endeavor is important. The continuance of this assembly annually for a number of years would probably result in its becoming one of the most important educational institutions in the islands. The practice of bringing instructors from abroad should be continued, and from time to time should include educators not only of the United States, but of the adjacent countries of Japan, China, Indo-China, and the Malay Peninsula. In this way the benefits of comparative study and conference may be had.

Educational Work among non-Christian Tribes.

School work among the non-Christian peoples of the Philippines, for the extension of which a special appropriation of ₱75,000 was made last year, is being continued this year with decided success.

Schools for the Negritos, or Aetas, of whom there are estimated to be from 25,000 to 30,000, have been opened in the Bukao River Valley, province of Zambales; in the Tarlac River Valley; in the mountains back of Florida Blanca, province of Pampanga; and in the provinces of Ambos Camarines and Antique. They are being taught reading, writing, knowledge of money and values, and simple business figuring.

Among the primitive Malayan people of the Visayan Islands and northern Mindanao, sometimes called "Bukidnon" ("hill people"), schools have been started, as also among the Mangyans of western and southern Mindoro and among the Tagbanuas around Puerto Princesa, in the island of Palawan.

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An American teacher has been assigned to organize school work in the subprovince of Bukidnon, province of Agusan, in northern Mindanao, where 5 schools have been opened in charge of Filipino teachers. For the Manobos, in the valley of the Agusan River, 16 schools are being conducted by Visayan teachers under an American supervisor. A normal and industrial training school for Manobo young men has been authorized.

Among the Igorots and other hill people of northern Luzon, of whom there are several hundred thousand, both industrial boarding schools and village primary schools have been established. There were in operation last year 6 industrial boarding schools—1 at Baguio, in Benguet, for boys, and 1 at Bua, in Benguet, for girls; 1 at Alilem, in Amburayan; 1 at Cervantes, in Lepanto; 1 at Bontoc, subprovince of Bontoc; and 1 at Lagangilang, for Tinguians. A boarding class was also conducted toward the end of the last school year at Banaue, and 1 for small girls at Bontoc.

As fast as the Igorot boys can be trained as teachers, village schools will be opened in the different communities, which will, in time, probably supersede the boarding institutions. At the present time the services of a number of Ilocano teachers are being utilized for this work. There were, last year, 11 village schools in the province of Benguet, 5 in the subprovince of Amburayan (of the Mountain Province), and 13 in the subprovinces of Lepanto and Bontoc.

Similar schools were conducted in the Igorot and Tinguian villages in the provinces of Iocos Sur and Ilocos Norte. Among the subjects taught the Igorot are basket making, truck gardening, pottery, blacksmithing, carpentry, cloth weaving, and brass casting. A number of serviceable school buildings have been built by these people, without cost to the government other than for nails, paint, and glass. This year 6 new village schools have been opened in the subprovince of Bontoc, the buildings having been voluntarily constructed by the people.

In the subprovince of Abra, of the province of Ilocos Sur, 23 village schools, with an attendance of 940 children, were conducted among the Tinguians.

Special attention is being given to teaching weaving to the Igorot girl, who, as a general rule, is accustomed from an early age to do hard work in the fields. If she can learn to do profitable work at the loom her parents will be more likely to consent to her giving up the field drudgery for the schoolhouse.

It is believed that school work along the elementary industrial and academic lines above indicated will be permanently successful among the non-Christian peoples of the Philipine Islands, and the results obtained under all the difficult circumstances can hardly fail to be considered as creditable.

For more detailed information and general statistics relating to the work of the bureau of education attention is invited to the very complete and interesting report of the director of education, attached hereto and made a part of this report and marked "Exhibit A."

PHILIPPINE MEDICAL SCHOOL.

Substantial progress in the organization, equipment, and operation of the Philippine Medical School has been made during the past year.

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Teaching Staff.

The teaching staff has been augmented by the appointment of associate and assistant professors, and by a lecturer in medical entomology. In February last the board of control authorized the appointment, for the school year 1908–9, of demonstrators in anatomy and histology, bacteriology and pathology, medical zoology, chemistry, and physiology, and first-class student assistants in anatomy, histology, bacteriology, pathology, medical zoology, clinical microscopy, and chemistry. The appointment of second-class student assistants in anatomy, histology, and clinical microscopy was also authorized. These positions are filled from the student body, the appointees being selected upon merit, and serving under the personal supervision and instruction of their respective professors. The demonstrators receive ₱480 per annum, first-class student assistants ₱240 per annum, and students of the second class ₱120 per annum. The compensation is necessarily small, but it is believed that the students thus selected will prove to be of decided value to the school.

Students Enrolled.

The membership statistics of the school are as follows:

Students.	First year.	Second year.	Third year.	Fourth year.	Fifth year.	Total.
School year 1907–8	18	10	10	16	0	54
School year 1908–9	22	16	7	10	12	67

There were 2 government scholarship students and 1 woman student in the first-year class of 1907–8. The school year 1908–9, which opened on June 8, 1908, has no government scholarship students. Of the first-year class 2 are women.

Changes in Officials.

The former positions of registrar and secretary of the faculty have been abolished and the new position of secretary of the Philippine Medical School has been created instead. Dr. James F. Kemp was appointed thereto. His duties include the general administration of the internal business affairs of the school, such as the receipt and disbursement of funds, care of property, registration of students and recording of class standing, rendering of fiscal reports, and the charge of correspondence, requisitions, etc. The secretary is bonded for ₱5,000.

New Building.

The plans for the new building for the school, mentioned in the last report of this department, have been completed, and bids for the construction of the same have been received and are under consideration. It should be ready for occupancy within a year, will provide ample accommodations for 165 students, and be so arranged as to permit of harmonious extension.

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The general and technical equipment of the school has been greatly bettered and increased. One item of 63 microscopes, bought from Leitz, Germany, cost ₱11,379.89.

The repairs to scientific apparatus have cost less than ₱20 during the past year, which indicates the careful handling these delicate instruments have received on the part of the students. The breakage of glassware has been inconsiderable.

A schedule of work has been prepared for the 5 classes, covering oral recitations, laboratory work, attendance at clinics, lectures, and special work in the bureau of science and the various hospitals of Manila.

Morgue and Autopsies.

The Malecon morgue, under the direction of the school, was opened on July 9, 1907. Up to July 31 last the autopsies held there numbered 177. Cases in which death resulted from contagious diseases are taken directly to the morgue at the San Lazaro Hospital. The morgue attendant renders a daily report to the director of health. A careful and complete record of all autopsies is kept and bound in permanent form. The establishment of a pathologic museum has been begun, and in time the same will prove very valuable.

Free Clinic and Dispensary.

One of the most important features of the Philippine Medical School is the free clinic and dispensary maintained by it at St. Paul's Hospital, which is located conveniently near the present school quarters. At this clinic and dispensary the poor receive medical attention and medicines without charge. The clinic is divided into departments of surgery; pediatrics; obstetrics; eye, ear, nose, and throat; and general and tropical medicine.

From September 1, 1907, to June 30, 1908, the patients visiting this clinic and receiving treatment were as follows:

Month.	Medical.	Surgical.	Children.	Obstetrical.	Eye, ear, nose, and throat.	Total.
1907.						
September	492	236	73	2	19	822
October	575	254	43	1	101	974
November	587	281	56	1	155	1,080
December	508	286	70	1	160	1,025
1908.						
January	573	324	45	.....	221	1,163
February	577	331	37	.....	223	1,168
March	605	361	43	.....	265	1,274
April	494	326	43	.....	251	1,114
May	413	301	44	.....	179	937
June	620	388	83	.....	221	1,312
Total	5,444	3,088	537	5	1,795	10,869

Act No. 1679 appropriated funds for 50 free beds, for the clinical purposes of the school, and 50 more beds, maintained by the city of Manila, are likewise available. The patients occupying these beds are furnished with lodging, subsistence, medicine, dressings, and medical and surgical treatment at a cost to the government of ₱1.40 per day each. Between August 20, 1907, and August 31, 1908, 700

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patients, representing 17,230 days' service, were admitted. The clinics and free beds are under the close supervision of the clinical committee of the faculty of the Philippine Medical School. In addition to furnishing very necessary clinical material for the students, they constitute a great and most valuable public charity. So popular has this branch of the school become that the present quarters and equipment are inadequate to handle the number of patients applying for treatment. With the completion of the new general hospital, now in course of construction, the clinic facilities of the school will be greatly improved.

EXPENDITURES.

The general office force of the Philippine Medical School consists of the secretary, at ₱3,600 per annum; a stenographer, at ₱2,400 per annum; a morgue attendant, at ₱1,800 per annum, and an employee for free dispensary, at ₱50 per annum. There are also employed 1 engineer, 1 watchman, and 9 laborers.

For the period from July 1, 1907, to June 30, 1908, the appropriations for the support of the school were as follows:

Act No. 1660 (salaries, wages, contingent expenses)	₱6,000.00
Act No. 1679 (salaries, wages, contingent expenses)	122,000.00
Act No. 1679 (50 free beds)	25,000.00
Total	153,000.00

The following is a statement of the expenses chargeable thereto for the fiscal year 1908:

Repairs and alterations	₱7,533.69
Office supplies	1,178.93
Apparatus, equipment, and supplies	35,549.43
Furniture	3,304.97
Chemicals	2,686.20
Transportation, city of Manila	174.22
Per diems	184.00
Cablegrams	440.01
Telegrams and postage	51.76
Printing and binding	1,121.22
Light and electricity	258.45
Laundry	61.44
Ice and distilled water	1,034.60
Salaries and wages	46,576.45
Telephone	151.90
Small animals	32.00
Transportation of employees	405.70
Miscellaneous (translation charges, blueprints, exchange, freight, bond, feed for small animals, etc)	478.32
St. Paul's Hospital (contract)	19,782.00
Grand total	121,005.29

Summary.

Contingent expenses, expended	₱54,646.84
Salaries and wages, expended	46,576.45
Total	101,223.29
Balance	26,776.71
St. Paul's Hospital (contract expended)	19,782.00
Balance	5,218.00
The outstanding obligations amounted to	22,610.28

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The balance of ₱5,218 reverts to the general funds.

Appropriations by board of control for fiscal year 1908.

For 50 beds, St. Paul's Hospital	₱25,000.00
Contingent expenses	77,260.00
Salaries and wages	48,740.00
Total	151,000.00
Balance not appropriated by board of control	2,000.00

It is my belief that the next five years will amply demonstrate the wisdom of the establishment by the government of the Philippine Medical School, if, indeed, that demonstration has not already been made.

For more detailed information relating to the Philippine Medical School, attention is invited to the report of the dean, attached hereto and made a part of this report and marked "Exhibit B."

BUREAU OF SUPPLY.

The organization and duties of this bureau remain as they were on the date of the last annual report of this department.

The business of the bureau during the past year has been conducted in a generally satisfactory manner.

The total sales amounted to ₱4,275,990.25—an increase of about 29 per cent over the preceding twelve months.

Decided savings have been effected in the salaries and wages paid to employees, amounting for the year to ₱36,461.04, the contingent expenses, however, exceeding the estimated amount by ₱19,794.26, leaving a net saving made of ₱16,666.78. The excess under this head was caused by the purchase of 2 new lorchas, certain office furniture and fixtures, and the increased cost of the coal used in the division of cold storage.

The bookkeeping, property returns, and stock accounts have been reorganized and perfected since the last report of this department, and the benefits of the change are undeniable.

Stock accounts are now kept by a card system, which gives a complete history of every article purchased and shows the exact amount of any article on hand. The number of separate cards involved on June 30, 1908, was 15,000. The value of the stock on hand on that date was ₱1,173,716.10, or ₱43,294.28 less than the amount on hand at the close of the fiscal year 1907.

PURCHASES.

The purchases made by the bureau of supply during the past year totaled ₱3,718,240.70, of which ₱2,659,543.31 was expended for goods bought in Manila, ₱993,588.36 for those purchased in the United States, and ₱65,109.03 for purchases made in China, Japan, Europe, and elsewhere.

In the amount of purchases made in the United States are included ₱56,407.42, paid by the Bureau of Insular Affairs at Washington for schoolbooks; ₱76,425.04, paid for special supplies for the bureau of printing; ₱133,999.70, paid for ammunition and clothing for the

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Philippines Constabulary; ₱315,603.44, for bridge material and construction supplies; ₱33,018.50, for special agricultural and road machinery, and ₱12,022.98 for special chemicals for the division of cold storage, the foregoing supplies not being obtainable in sufficient quantities in these islands.

Assets and Liabilities.

The assets and liabilities of the bureau of supply on June 30, 1908, were as follows:

Assets.

Supplies (merchandise in stock)	₱1,165,660.04	
Appropriation, bureau of supply (available funds with the treasurer)	346,833.71	
Cash (advances) with special disbursing officer, bureau of supply, to meet official obligations	20,210.71	
Cash (advances) with disbursing agent, Washington, D. C	93,945.38	
Supplies bought in the United States and still in transit	296,412.06	
Accounts receivable (including all accounts due bureau)	721,765.41	
Purchase value of equipment used by offices and warehouses, bureau of supply	45,482.10	
Services for fiscal year 1909 contracted and paid for in advance	9,131.24	
Total		₱2,699,440.65

Liabilities.

Appropriation "purchase of supplies" (working account)	1,400,000.00	
Accounts payable (consolidated)	83,913.22	
Transportation payable (consolidated)	30,000.06	
Rent account powder magazine, collected in advance	2.00	
Total		1,513,915.28
Surplus		1,185,525.37

The operating expenses of the bureau during the past seven years were as follows:

Year.	Salaries and wages.	Contingent expenses.	Total.
1902	₱152,932.44	₱144,776.44	₱297,708.88
1903 (46.61 per cent increase)	275,742.68	166,684.28	442,426.96
1904 (36.49 per cent increase)	384,410.84	219,463.07	603,873.91
1905 (7.03 per cent decrease)	380,486.68	180,926.04	561,412.72
1906 (36.07 per cent decrease)	267,110.05	91,811.52	358,921.57
1907 (10.99 per cent decrease)	242,390.88	77,095.92	319,486.80
1908 (3.14 per cent increase)	245,186.61	84,335.26	329,521.87

The sales made to the various bureaus of the insular government during the past fiscal year amounted to ₱3,417,393.61, and to the provincial and municipal governments, ₱858,596.62, a total of ₱4,275,990.23.

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Forage and Grain Contracts.

The results obtained last year with the forage and grain contract, now just terminating, are not such as to warrant the continuation of that system. On this subject the purchasing agent says:

> The same plan which proved so unsatisfactory in regard to cement has been really disastrous as to forage. We have had more trouble and annoyance with this contract than any other. We have had a struggle to keep the hay up to grade. The contract price during the year 1907, which is still in force, was ₱95.90 per ton of 2,240 pounds. Shipment after shipment has been rejected and the prices scaled down to quality offered. We refused to accept two shipments at a higher price than ₱60 per ton, and two others were rated ₱75 per ton. This plan was continued until we compelled delivery of hay up to grade. I am now advertising for the new contract and hope to get the price materially reduced. I am calling for bids, under the present system, allowing the contractors to make deliveries from their bodegas in Manila subject to inspection and acceptance by the bureau of supply; and also for deliveries direct to our wagons or forage sheds at Manila. I am also asking for bids in New York, Seattle, and San Francisco, delivery f. o. b. at the points mentioned. The question of supply of forage is too important for experiment. The original plan of purchasing all hay and grain in the United States was most satisfactory and economical.

It seems clear that the public interests require that the bureau of supply should purchase these articles in their principal markets, warehouse the same in Manila, and make deliveries from time to time as they are requested. This plan has been fairly demonstrated to be economical and the only way which gives satisfaction.

Sales and Disbursements.

The following is a comparative table of the total annual sales made from the date of the creation of the bureau up to June 30, 1908:

Fiscal year.	Amounts.	Increase (+) or decrease (—).
		Per cent.
1902	₱1,970,549.78	.....
1903	3,134,141.98	+59.05
1904	5,309,474.37	+69.41
1905	4,936,976.79	− 7.01
1906	3,605,250.07	−26.97
1907	3,311,572.52	− 8.14
1908	4,275,990.23	+29.12

The total amount of sales up to June 30, 1908, was ₱26,543,955.74.

The constant decrease in the cost of conducting the bureau of supply is shown by the following table, which gives the percentage cost of operation calculated upon amount of sales for each fiscal year:

	Percentage.
1902	16.51
1903	15.52
1904	12.49
1905	12.50
1906	10.92
1907	10.77
1908	8.62

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Division of Cold Storage.

During the past fiscal year the gross earnings of this division were ₱616,673.09, as against ₱632,565.37 for the preceding year, a decrease of ₱15,892.28.

The cost of operation was ₱276,211.06, as compared with ₱264,402.13 for the preceding twelve months, an increase of ₱11,808.93.

The net earnings of the division were ₱340,462.03. For the fiscal year 1907 they were ₱368,163.24, a decrease of ₱27,701.21, or about 7.5 per cent.

The decrease in the gross earnings is explained by the following items:

Service.	Increase.	Decrease.
Cold storage	₱3,301.60	
Ice		₱19,228.28
Water		2,268.23
Electric current	494.50	
Transportation	1,000.21	
Miscellaneous	807.92	
Total	5,604.23	21,496.51
		5,604.23
Decrease		15,892.28

This reduction in gross earnings is explained by the fact that the Subsistence Department of the United States Army purchased 417,024 pounds of ice less than during the previous year, and there was likewise a decrease in the sales to officers and enlisted men personally. The shipments of ice to Camp Stotsenburg have practically stopped, as the army has constructed a plant to supply that post.

It is probable that a further reduction in ice shipments will occur as the number of military stations becomes smaller and the troops are assembled in large posts, equipped with ice-making apparatus.

The great reduction in net earnings is accounted for by the decreased gross earnings, above explained, and the substantial increase in the cost of coal and forage—two large items in the operation expenses of the division.

New regulations and tariffs for the sale of ice and distilled water and the rental of cold-storage space were promulgated by the department of public instruction and became effective on January 15, 1908. The new tariffs provide for the computation of cold-storage charges on the basis of the time during which the articles are actually in cold stores, whereas under the former system the charges were based merely upon the amount of articles removed from cold stores during a given month, irrespective of how long they had been occupying space. It is believed that the present regulations are more equitable and fair for all concerned.

Distilled water is now delivered in cases of six 2-quart glass bottles, wherever so requested, instead of in 5-gallon demijohns. The advantages of this plan are twofold—first, greater protection and cleanliness, as the bottles may be put directly into a refrigerator and the water poured into a glass without any rehandling; and, second, greater convenience of handling. The bottles have patent rubber stoppers, and are thoroughly sterilized each time before refilling and issue.

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For more detailed information in regard to the operations of the division of cold storage during the fiscal year 1908, attention is invited to the report of the chief of said division, attached to the report of the purchasing agent.

RECOMMENDATION.

In the last report of this department the following statement was made as to the economic handicap under which the division of cold storage (government ice plant) is laboring:

The work of the division of cold storage is a most important one to the people of these islands, particularly to the inhabitants of Manila. Due to the limitations which at present surround its functions, the production of ice and distilled water is not as economical as it should be. The plant is a large, modern one and, if worked up to its full capacity, could easily supply all the ice needed by the public of Manila and of other places to which it could be economically shipped. Act No. 315 of the Commission, however, prescribes that after furnishing ice to the employees of the government and of the army and navy, it may be furnished to the public only at such rates as will not compete with private concerns making ice. So far as known, there is only one other such concern in Manila, the "Fabrica de Hielo de Manila." This factory advertises a daily output of 50 tons, but it is understood that the manufacturing capacity of the plant is about 35 tons and the actual output, approximately, 20 tons. This ice is sold to the general public at 2 centavos per pound. Were it not for the necessity of avoiding competition with this private enterprise, the division of cold storage could furnish ice to the public, and make a reasonable profit thereon, at 1½ centavos per pound. The large wastage which now occurs would be greatly diminished, if not entirely wiped out, the public would receive cheaper ice, and the unit cost of production of the entire government plant would be considerably reduced.

The situation which gives rise to the above comments has been but intensified during the past year. The net earnings of the plant have decreased, the plant and machinery have suffered the usual deterioration, and the price of ice and distilled water to the public has not been lowered. Repairs of a substantial nature should be made to the plant at an early date, and certain timbers which are constantly exposed to heat and cold, thus necessitating frequent renewals, should be replaced by steel and concrete construction. The original cost would be considerable, but the eventual economy resulting would be substantial.

The plant has a machine capacity for an output of 100 tons of ice daily and, with the addition of a 30-ton ice tank, that amount could be produced with but a slight increase in present operating expenses.

In this connection, the purchasing agent says, in his current annual report:

Your attention is respectfully called to my recommendation of last year that the government purchase the Fabrica de Hielo de Manila and supply ice and water to the entire population at a greatly reduced rate, making the division of cold storage a great public utility. The Philippine government has to-day a plant which cost approximately ₱1,200,000.

Act No. 315, by which we are prevented from entering into competition with so-called private enterprises, seems to me an unjust discrimination against the general public and taxpayers in favor of military and civil employees, as a rule nontaxpayers.

The ice plant is a revenue producer, and if the plant is put in perfect repair, all claims of the Fabrica de Hielo de Manila be satisfied either by purchase or otherwise, giving the government exclusive control of the ice and distilled water business, the net earnings now amounting to ₱340,000 per annum can be greatly increased and ice supplied to the public generally at 1 centavo per pound.

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This department is satisfied that the acquisition by the government of the Fabrica de Hielo de Manila at a reasonable valuation would be of most direct benefit to the government revenues derived from the sale of ice and of immense advantage to the public through the reduction of the price of ice to 1 centavo per pound.

For further information and details as to the operations of the bureau of supply, attention is directed to the report of the purchasing agent attached hereto and made a part of this report and marked "Exhibit C."

BUREAU OF PRISONS.

The insular prisoners, or those under the direct control of the bureau of prisons, have been distributed among a number of stations during the past year, and the prison population of Bilibid has been correspondingly reduced.

On June 30, 1907, the number of such insular prisoners was 4,320, and on June 30 of the present year 4,537, an increase of 217. The distribution of these prisoners at the close of the last fiscal year was as follows:

Bilibid Prison	2,789	
Hospital "B"	156	
		2,945
Camp Avery		639
Iwahig penal colony		478
Malolos (special)		88
Laguna (special)		222
Leyte (special)		32
Samar (special)		2
Santo Domingo, Laguna (special)		20
Calarian Prison (special)		6
Luneta police station (special)		21
Hospicio de San Jose		13
San Lazaro Hospital		71
Total		4,537

The number of provincial prisoners on the same date was 1,361, making a total of 5,898, an increase of 305 over the number at the same time last year.

In Bilibid the prison population on June 30, 1907, was 3,533, and on June 30 of the present year 2,945, the decrease of 588 being due to the transfer of a large number of prisoners to outside stations, as shown by the foregoing table.

Below is given a table showing the commitments, transfers, releases, pardons, deaths, and other changes occurring in Bilibid Prison during the past fiscal year:

On hand June 30, 1907	3,533	
Received by commitment	2,564	
By transfer from other stations	580	
Captured	3	
		6,680
Released by expiration of sentence	1,603	
Released on bond	85	
Cases dismissed	81	
Released by order of court	33	
Released by payment of fine	99	
Pardoned	135	
Satisfaction of fine and sentence	8	

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Deported	52	
Escaped from Hospital "B"	2	
Executed	22	
Paroled	3	
Died	113	
Transferred to other stations	1,499	
		3,735
On hand June 30, 1908		2,945

The total cost of maintenance of prisoners under the direct charge of the bureau of prisons, including the Iwahig penal colony, was ₱643,157.45, as compared with ₱668,608.99 for the fiscal year ended on June 30, 1907.

The gross cost of maintenance was ₱168.50 per prisoner for the year, or about ₱0.46 per day. This figure includes all expenditures for salaries and wages of officers and employees of Bilibid Prison (except the industrial division, where salaries and wages are paid from the earnings), all subsistence, supplies, illumination, burial expenses, hospitals, gratuities, transportation of discharged prisoners, general repairs, and current improvements, for all insular prisoners at Bilibid, the Iwahig penal colony, and at other prison stations.

The daily per capita cost at Bilibid alone was ₱0.4725, and at the Iwahig penal colony, ₱0.425. The daily per capita cost at Bilibid for the preceding fiscal year was ₱0.438, and the excess during this last year was because of the great reduction, amounting to 563 prisoners, in the daily average prison population, due, as above stated, to the distribution of prisoners at outside stations where they were performing labor on public works.

Had these prisoners remained in Bilibid, the gross per capita would have been but ₱158.44 for the year, or a daily average cost of ₱0.432 per prisoner, which would be a trifle less than the figure for the preceding year.

The net cost of maintenance of prisoners at Bilibid was ₱0.382 per diem, and at the Iwahig penal colony, ₱0.3868, as against ₱0.384 and ₱0.407, respectively, for the fiscal year ended June 30, 1907.

SUBSISTENCE.

The daily average cost of subsisting insular prisoners during the past fiscal year has been as follows:

Station.	Americans and Europeans.	Filipinos and Asiatics.
Bilibid Prison	₱0.3673	₱0.1633
Hospital "A"	.2555	.2555
Hospital "B"		.3055
Corregidor		.1615
Iwahig penal colony		a.1431

a By charging in the food products of the colony at usual market value, the average cost of subsistence becomes ₱0.1783.

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Discipline and Health.

The conduct of the insular prisoners has been very gratifying, and a large percentage of the first-class prisoners have a conduct record of 100, which is the highest that can be obtained. In the first conduct class were 1,918 prisoners, in the second 490, and in the third 330, a total of 2,738 serving sentence, and 207 detention prisoners (awaiting final sentence), a total on June 30, 1908, of 2,945.

The health of the prisoners has been generally good. The report of the prison physician, embodied in the report of the director of health, shows details and statistics on this point.

The new prison hospital, mentioned in the last report of this department, is advancing rapidly and should be ready for occupancy by November 15.

Improvements and Repairs.

New quarters for guards have been provided, 1,000 feet of prison wall of reënforced concrete have been erected, double iron gates for the prison entrance have been made and located, 1,000 iron sanitary prison beds have been manufactured and installed, a water-distilling plant and electric-light signal system have been installed, and a number of other important improvements and repairs have been effected, in addition to the usual minor repairs to buildings and grounds.

Industrial Division.

There were 894 prisoners employed in the shops of the division during the past fiscal year. They have been taught various trades, have performed efficient and valuable work, and are qualifying themselves to earn an honest living upon their release.

The new accounting system installed in this division has now been in operation for a year, and the results are entirely satisfactory.

The value of the total product of this division last year was ₱405,399.03 and the total cost of operation ₱354,464.63, giving a net cash profit to the government of ₱50,934.40.

Of the total product above stated, ₱132,833.10 was in work performed for the bureau of prisons, ₱223,796.45 in that for the other bureaus and branches of the insular government, and ₱48,769.48 in that for the general public.

The principal part of the product disposed of to the public was sea-grass furniture, to the value of ₱28,592.90. This furniture is made entirely of local products and does not compete with any private enterprise.

In addition to the net profit of ₱50,934.40 mentioned above, the government received a further profit of ₱64,236.08, paid to the bureau of prisons for prison labor during the past year.

The sales of products amounted to ₱271,273.27, an increase of ₱156,178.08 over the preceding year. A large proportion of this increase is due to the transfer of the city shops of Manila to the industrial division.

The net cash assets of this division on July 1, 1907, were ₱93,961.40 and on June 30, 1908, ₱153,920.45, an increase of ₱59,959.05.

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For further information and detailed financial data as to the operations of the industrial division, attention is called to the report of the assistant director of prisons in charge thereof attached to the report of the director of prisons.

Iwahig Penal Colony.

The Iwahig penal colony, a detailed description of which was given in the last report of this department, has continued to improve, especially in experimental agriculture and industrial work. The reservation has been beautified, and the benefits accruing to prisoners assigned to this station have become so well understood that there is a positive desire on the part of many prisoners in Bilibid to attain a conduct record which will secure them a transfer to Iwahig.

It was hoped that during the present fiscal year it would be possible to furnish practically all the commissary supplies for Iwahig from the products of the colony, but a disastrous cloudburst on the night of September 23, 1908, in which an American agriculturist (civil employee) and 7 Filipino prisoners perished, destroyed a large proportion of the crops on which the colony depended.

The changes in the prison population at Iwahig during the last fiscal year were as follows:

Prisoners at Iwahig, July 1, 1907		467
Received during year		162
Escaped prisoners captured		2
		631
Returned to Bilibid	149	
Released at Iwahig	12	
Died	4	
		165
Present at Iwahig June 30, 1908		466

The number of prisoners employed in the different divisions of the colony on June 30, 1908, was as follows:

Farming	101
Construction	61
Forestry	68
Roads	30
Transportation	29
Serving	49
Executive	16
Health	12
Out stations	54
Sick in hospital	21
Police	20
In Puerto Princesa	5
Total strength of colony	466

During the past year there were 3.75 hectares (9.375 acres) in cacao, 1 hectare (2.5 acres) in Arabian coffee, 18.75 hectares (46.875 acres) in tree cotton ("kapok"), 4 hectares (10 acres) in cocoanut trees, 1.5 hectares (3.75 acres) in rubber plants, 2.25 hectares (6.25 acres) in maguey, one-half hectare (1.25 acres) in pineapples, 1 hectare (2.5 acres) in ylang-ylang, 1.5 hectares (3.75 acres) in papayas, and 1½

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hectares (3.125 acres) of orchard trees. A large number of other plants and trees were in seed beds and ready for transplanting.

There were also about 14 hectares (35 acres) planted in what are known as "quick-return crops," such as corn, palay (rice), Kaffir corn and broom corn, vegetables, and tobacco. A considerable amount of tobacco was harvested, but the leaf, although of excellent appearance, had absorbed salt to such an extent as to make it valueless for cigars and cigarettes. Corn has been very successful. The chief crops of vegetables raised have been sweet potatoes, squash, gabi, papayas, cucumbers, patolas, eggplant, sitao, and tomatoes. About 141 tons of these vegetables were grown, the greater part of which were consumed at the colony.

The following extract from the report of the superintendent of the colony, in regard to health conditions, should prove of interest:

The general health of the colony has been excellent. The prevailing disease is malaria, which accounted for 50.26 per cent of cases. There is no dysentery and no beriberi, those two especial curses of most new camps in a tropical jungle. As more land is cleared and drained the malaria is steadily diminishing. Beriberi, which was rife at the colony in 1905–6, was easily eliminated by change of ration, burning of infected buildings, and draining or filling of damp places. Dysentery, which was also a scourge, has long been abolished by removing the cess-pits to 200 yards from the kitchen and keeping them screened from flies, together with daily collection and burning of all garbage. The cess pits in 1906 were festering sores, wide open, and about 50 feet from main kitchen.

By weighing newly arrived prisoners and reweighing them after three months and six months at the colony it has been found that the average gain in weight per man is 2½ pounds; this despite hard work in the open air and that new arrivals generally suffer from malaria.

The following statistics are of interest:

Colonists admitted to hospital during year	577
Discharged cured	569
Died	4
Colony employees treated	7
Province of Palawan cases treated in hospital	83
Government employees treated	11
Colony death rate per 1,000	8.6
Average percentage colonists daily sick	3.74
Births at colony	7

Special attention is invited to the drop in the death rate from 261 per 1,000 in 1905, 116 per 1,000 in 1906, to 25 per 1,000 in 1907, and 8.6 per 1,000 in 1908.

A corresponding reduction in the percentage of sick may be noted from 1906, when from 20 per cent to 30 per cent of the men were daily sick in hospital, to at present, when 3.74 per cent are sick, and it frequently drops to below 2 per cent.

CLOUDBURST.

On the night of September 23 last, almost without warning, the Iwahig River, which runs through and past the reservation, rose to an unprecedented height, as the result of a cloudburst, and inundated practically the entire colony. An American employee, Harold M. Knight, who had recently joined the staff as agriculturist, and 7 Filipino prisoners were drowned while voluntarily engaged in rescuing other employees and prisoners who were in jeopardy. All the officers, employees, and prisoners displayed great coolness and bravery, and owing to their efforts a large number of their fellows were saved from drowning.

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This catastrophe was without precedent, and the loss to the colony, in equipment, supplies, and growing crops, will undoubtedly prove very severe. No detailed reports on these matters have yet arrived. An early personal inspection will be made by the writer with a view to determining whether any change in the general location of the colony site is advisable.

On August 31, 1908, Maj. John R. White, who has acted as superintendent of the colony since September 4, 1906, resigned to accept his promotion to a lieutenant-colonelcy in the Philippines Constabulary. He was succeeded as superintendent by Mr. C. H. Lamb, formerly treasurer of the province of La Laguna.

It is not too much to say that the success of the Iwahig penal colony, and even the possibility of its existence, have been in a large measure due to the exceptional personal qualities and unwavering devotion to duty of Colonel White. He turned a disease-laden swamp into a healthful and beautiful reservation, a body of unreformed criminals into a corps of self-respecting laborers, and what might have been an expensive prison station into an economical and largely self-supporting penal colony. His loss will be severely felt for a long time to come, though the energy and enthusiasm displayed by Superintendent Lamb give every reason to look for a continuance of the splendid progress made by the colony under the direction of Colonel White.

For more detailed information and statistical data as to the workings of the Iwahig penal colony attention is called to the report of the superintendent attached to the report of the director of prisons.

Provincial Prisons.

There has been some progress made during the past year in establishing uniformity of imprisonment rules and regulations throughout the provincial jails, but much remains to be done in that respect. The principal obstacles to further improvements along these lines are, first, lack of funds with which to construct and repair jails and pay higher grade employees, and, secondly, a certain apathy on the part of provincial officials in adopting measures calculated to put the jails on a strictly disciplined and businesslike basis. However, monthly reports are now being received by the bureau of prisons, showing the prison population, sentences, race, sex, and age classifications, changes in prison population, escapes, measures adopted for recapture, remedial steps taken to prevent further escapes, etc.

It has been consistently sought to impress upon provincial officials the need of uniformity throughout the islands in the execution of the sentences of the courts, and that this decent execution of the law's demands is neccessary not only for its effect on those imprisoned, but on the public as well. Insistence has been had on a firm but kindly manner toward prisoners, a rigid adherence to justice in all dealings with them, the provision of good, wholesome, clean food, at regular intervals and in sufficient quantities, and, above all, the training of the prisoners to habits of industry and personal cleanliness.

Rules and regulations for the guidance of prison officials and the government of prisoners have been furnished to provinces, a number of provincial prison wardens have received instruction and training at Bilibid, and a manual of prison work is now in course of preparation by the bureau of prisons.

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Plans for a model provincial prison have been distributed to such provinces as have applied for them. The province of Pampanga is arranging to build a new jail after the plans above mentioned, and several other provinces have indicated a desire to do likewise.

The director of prisons reports a great improvement in the prison administration of the provinces of La Laguna and Bulacan.

Reform School.

The recommendation contained in the last report of this department for the erection of suitable buildings for reform schools, to be established outside the city limits of Manila, is hereby repeated.

Habitual Criminal Act.

An examination of the prison records of Bilibid shows a large number of prisoners who have been convicted and sentenced many times for criminal offenses. While these men are at liberty—between their terms of imprisonment—they are necessarily under constant surveillance by the police, which entails considerable expense upon the government. These men rarely, if ever, do honest work, and on their release from confinement but a short time elapses before they are again under sentence.

In the courts of the city of Manila alone the number of persons convicted and serving 5 terms is 28; those serving 6 terms, 23; 7 terms, 21; 8 terms, 13; 9 terms, 17; 10 terms, 14; 11 terms, 7; 12 terms, 8; 13 terms, 3; 14 terms, 1; 15, 17, 18, and 19 terms, 2 each; 22, 23, and 30 terms, 1 each; while 1 prisoner has been convicted and has served 36 terms.

It is believed that an "habitual criminal act" in some form should be passed by the Legislature.

The Revised Laws of Massachusetts, in section 21 of chapter 220, contains the following provision, which has been held to be constitutional:

> Whoever has been twice convicted of crime and has been sentenced and committed to prison in this or another State, or once in this and once or more in another State, for terms of not less than three years each, and does not show that he has been pardoned of either crime on the ground that he was innocent, shall, upon conviction of a felony in this Commonwealth, be considered an habitual criminal and be punished by imprisonment in the state prison for twenty-five years.

The term of imprisonment mentioned therein is believed to be too severe, and it is thought that a statute should be enacted providing that anyone who has been convicted three or more times of a felony, or misdemeanor involving moral turpitude, or drunkenness or vagrancy, and does not show that he has been pardoned for one or more of said offenses on the ground that he was innocent, shall be considered an habitual criminal, and shall be punished by imprisonment, in the case of a felony, for not more than twenty years, and in all other cases for not more than eight years, unless the minimum prison sentence which he would receive under the existing law should be equal to or greater than said period, in which case this law shall not be applied.

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For further details in regard to the operations of the bureau of prisons and the stations to which insular prisoners have been temporarily or permanently transferred, attention is invited to the report of the director of prisons attached hereto and made a part of this report and marked "Exhibit D."

BUREAU OF PRINTING.

The work of this bureau has continued to show a steady increase in efficiency and to produce a marked economy to the government. The value of the product was ₱553,765.19, as compared with ₱470,262.05 for the fiscal year ended June 30, 1907.

The total credits accruing to the bureau were ₱562,844.97, against which must be charged the operating expenses, amounting to ₱489,-829.02, leaving a net surplus or profit of ₱73,015.95. Of this amount, ₱72,908.25 was refunded to the different bureaus of the insular government, the provinces, and the city of Manila, in proportion to the value of the work performed for each branch during the year. The entire printing work of the government was therefore performed at actual cost, in an efficient and economical plant, except for an insignificant surplus of ₱107.70 carried over to the credit of the fiscal year 1909.

During the past year the sum of ₱41,891.98 was set aside for renewals and repairs to plant and equipment, and of the total renewal and repair fund ₱32,867.53 was expended. The balance of said fund on hand June 30, 1908, was ₱35,400.37.

A considerable amount of overtime work was performed by this bureau during the past year, principally caused by the requirements of the Philippine Assembly.

The cost of equipment on hand June 30, 1908, was ₱476,256.15; value of supplies, ₱45,038.77; printing paper, ₱69,401.16; stock forms, ₱36,237.54, a total of ₱626,933.62. This amount does not include the value of public documents kept for sale, estimated at ₱188,390.

Public documents to the amount of ₱16,970.55 were sold during the year, and credit to that extent, less the postage and cost of handling (₱2,224.10) was given to the bureaus for which said documents had been printed.

The cost of printing paper and other supplies has increased during the past year—certain book paper, for instance, having advanced from ₱0.08333 to ₱0.09844 per pound.

The work orders executed for the different bureaus of the insular government aggregated 6,226; for the provincial governments, 7,591; for the city of Manila, 481; and for the Federal Government and outside parties, 1,109.

Additional machinery and equipment has been purchased, and several sets of halftones for three-color process have been executed.

During the year this bureau suffered two serious losses in personnel. On April 4, 1908, Mr. John S. Leech, the director, was appointed by the President to the position of Public Printer of the United States. Mr. Leech had been the organizer and creator of the bureau of printing in these islands, and to him is due a large part of the credit for the efficient and economical work which it has performed. Mr. Leech

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was especially fortunate in educating and instructing his Filipino employees, and though a strict disciplinarian, he was admittedly a most just and kindly employer. He had succeeded in inspiring his assistants, both American and Filipino, with a loyalty and esprit which have done much to bring the bureau to its high standard of efficiency.

His well-deserved promotion was the reward of constant and unwavering devotion to duty and the interests of the public.

On April 7, 1908, this bureau lost another valued officer through the death, at Long Beach, Cal., of Mr. Edwin C. Jones, the assistant director of printing. Mr. Jones had given freely of his time and energy to furthering the interests of the bureau, and his loss occurring simultaneously with the departure of Mr. Leech, was keenly felt.

On April 8, 1908, Mr. J. A. Hoggsette, formerly superintendent of work, was appointed assistant director of printing, and was made the acting director on April 25 last, when Mr. Leech left to assume his duties in the United States.

For further information and statistical data as to the operation of the bureau of printing, attention is called to the report of the acting director of printing attached hereto and made a part of this report and marked "Exhibit E."

Respectfully submitted.

W. MORGAN SHUSTER,
Secretary of Public Instruction.

To the PHILIPPINE COMMISSION, *Manila.*

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EXHIBIT A.

REPORT OF THE DIRECTOR OF EDUCATION.

MANILA, P. I., *August 1, 1908.*

SIR: I have the honor to submit the eighth annual report of the director of education. School statistics given in this report cover generally the school year which ended March 28, 1908. The vacation activities are also discussed and in some cases conditions and data for the new school year, which opened June 8, are given. Reports of receipts and expenditures cover the fiscal year July 1, 1907, to June 30, 1908. The fact that the fiscal year of the insular government begins July 1, and for the municipal governments January 1, necessitates our treating the funds of two different fiscal years for the municipalities.

In this report, while endeavoring to keep within the instructions laid down by Executive Order of the Governor-General No. 33, 1906, for the proper rendering of annual reports, the history and condition of public instruction have been more fully discussed than in previous reports. The reasons for this are several. It seems desirable at this time to make a review of the work of the bureau of education and in the light of its history consider what actual progress has been made. In the second place, the time has come when the policy of the bureau should be fully set before the public and its legislative representatives. The third reason for a somewhat extended treatment of educational work is the fact that the policy of the bureau has been a matter for considerable public discussion within the past school year.

The previous reports of the bureau of education are cited below:

Report of Dr. Fred W. Atkinson, General Superintendent of Public Instruction, to the Secretary of the United States Military Governor in the Philippine Islands; published in the Annual Report of Gen. Arthur MacArthur, Military Governor of the Philippines, Manila, 1901, Volume II.

Report of Dr. Fred W. Atkinson, General Superintendent of Public Instruction, to the Honorable Bernard Moses, Secretary of Public Instruction, for the year ending September 1, 1902; Third Annual Report of the Philippine Commission, Part II, Appendix A, pages 903–1004.

Report of Dr. David P. Barrows, General Superintendent of Education, for the period September 1, 1902, to September 30, 1903, made to Gen. James F. Smith, Secretary of Public Instruction; Fourth Annual Report of the Philippine Commission, 1903, Part III, pages 694–923; published separately by the Bureau of Insular Affairs, Washington.

Annual Report of Dr. David P. Barrows, General Superintendent of Education, to Gen. James F. Smith, Secretary of Public Instruction, for the period September 15, 1903, to September 15, 1904; Fifth Annual Report of the Philippine Commission, Part III, pages 847–930; published separately, Manila, September, 1904.

Annual Report of Dr. David P. Barrows, General Superintendent of Education, to Gen. James F. Smith, Secretary of Public Instruction, for the period September 15, 1904, to September 15, 1905; published in Report of the Philippine Commission for 1905, Part IV.

Annual Report of Dr. David P. Barrows, Director of Education, to the Honorable W. Cameron Forbes, Acting Secretary of Public Instruction, for the period July 1, 1905, to June 30, 1906; published in Report of the Philippine Commission for 1906, Volume III, pages 319–324; published also separately, Manila, Bureau of Printing, 1906.

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Annual Report of Mr. Gilbert N. Brink, Acting Director of Education, to the Honorable W. Morgan Shuster, Secretary of Public Instruction, for the year July 1, 1906, to June 30, 1907; published as a separate pamphlet, Manila, Bureau of Printing, 1907, with appendices; published also in Washington, Government Printing Office, 1908.

ORGANIZATION AND EXTENT OF SCHOOL ADMINISTRATION.

Public instruction in the Philippines is organized under 35 school divisions, the department of city schools of Manila, 4 insular schools located in Manila, and the government of the Moro Province. The 35 divisions differ considerably in geographical conditions and in the character of population; one, the "mountain division," embraces a large part of the cordillera of northern Luzon, and the inhabitants are almost entirely the Malayan mountaineers, or Igorot. The division of Nueva Vizcaya, which adjoins the mountain division, has only 6 towns inhabited by Christian people, but a much larger area inhabited by pagan peoples, Igorot and Ilongot. Another division, Palawan, which includes the adjacent Calamianes, Cuyos, Cagayan, and Balabac groups, has a large pagan and Mohammedan population. Mindoro has a sparse Christian population inhabiting towns of the coast, while the largely unknown interior is inhabited by Mangyan, a forest people of low culture. Two other school divisions, Misamis and Surigao, are part Christian and part pagan territory. Elsewhere these school divisions are coterminous with the provincial governments. They vary greatly in point of size and population. One of the largest in area, Isabela, has a very small population. Tayabas is in part well populated and in part very sparsely inhabited. In central Luzon the divisions, like the provinces themselves, are comparatively small in area but densely inhabited. In the Visayan Islands several embrace the whole of large islands, like Samar and Leyte. Cebu, while not the largest in area, has the largest population, about 660,000 souls.

The Christian peoples inhabiting these provinces belong to different linguistic stocks—Visayan, Bicol, Tagalog, Pampanga, Zambal, Pangasinan, Ilocano, Cagayan, and others. While social conditions are generally similar, the characters of these peoples present differences which in some degree affect the popular attitude toward schools and the character of the measures adopted to make school work successful.

Geographical conditions in the archipelago make school work difficult of administration. Many islands, towns, and settlements are isolated or difficult of access, in spite of the fact that interisland transportation has much improved within the past few years. The plan is a comprehensive one, however, and the purpose of the bureau of education has been to establish public schools of a standard type on every populated island and in every one of the former Spanish pueblos and as rapidly as possible in all the important barrios. This plan has already practically been realized. There is no municipality and no former pueblo without its school, and if we except certain islands in the Sulu Archipelago inhabited by Mohammedan Malays there are practically no inhabited islands of the archipelago without schools. Some of our best school work is done on the smaller but well-populated islands like Lubang, the Catanduanes, Romblon, Cuyo, Siquijor, and Camiguin. The northernmost school in the Philippine Islands is located on the island of Batan, 135 miles north of Luzon and about an equal distance south of Formoso. The most southerly school is in the Sulu Archipelago. The distance in latitude between these points is almost exactly 12 degrees, or over 800 miles.

The 38 school superintendents who bear the administrative oversight and responsibility for the school work in these numerous islands and islets are all Americans, selected because of their experience, business judgment, executive ability, earnestness, and zeal. Thirty-four of them came to these islands in 1900 and 1901 and have been in the work since the year the bureau of education was organized. As the basis for the annual report of the bureau of education, these superintendents render each year on or before July 15 a financial report covering school receipts and expenditures under their control, to the end of the fiscal year on June 30. The reports of this year appear to the director of education to be of exceptional interest and value. The statistical matter is systematic and authentic, the comments and criticisms, both upon school work and the general social conditions of the country, are those of men of experience in the islands, of intimate acquaintance with the Filipino population, sympathetic

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disposition, and good judgment. For these reasons the writer has inserted in his report considerable comment taken from the reports of these superintendents.

SPECIAL CONDITIONS AFFECTING SCHOOLS.

Schools are generally affected by prevailing economic conditions. The economic distress of the country during recent years, sometimes local and sometimes general, has naturally placed great obstacles in the way of realizing a perfect school organization. At the present time conditions seem better than for many years. In Batangas, for example, which suffered severely during and after the insurrection, the conditions are reported to be steadily improving. In this province the "aparcero system" prevails, whereby the land is owned in considerable estates and worked on shares by tenantry; but this lower class as well as the owners are reported to be making economic gains. In nearly all the other provinces conditions are becoming more favorable. The "hemp provinces," like Leyte, have been seriously affected by the recent slump in the value of abaca. Camarines has suffered from an agricultural depression due to the loss of the rice crop. The great plain of central Luzon, particularly the provinces of Bulacan, Pampanga, Nueva Ecija, and Tarlac, harvested a very inadequate rice crop this year, which has told considerably upon the ability of the people to support the schools. Yet, on the whole, the economic outlook is better.

The movement of the population is a factor to be reckoned with in connection with the conduct of schools. Sometimes this movement is regular and seasonal, like the annual migration of people of Antique to the sugar fields of Negros. In other cases the migration represents the settling of new country. The movement of Ilocano families into the northern part of Nueva Ecija goes steadily on, new barrios are constantly forming, and the demand for additional schools is thus enlarged. Similar migration of Ilocanos is constantly taking place into the provinces of the Cagayan River Valley and Nueva Vizcaya. In Isabela, since the establishment of pacific conditions, the people of the towns are scattering out from the centers and settling up the rich country distant from the river. In Cagayan the supervising teacher of Abulug reports that the closing of the nipa stills in that town, due to the internal-revenue tax, occasioned the removal of several thousand people from the nipa regions back into the farming lands of the interior. In Surigao there is a constant migration from Bohol, Cebu, and other crowded Visayan islands. Each year they come in increasing numbers. In the Agusan Province, where the immigration is greatest, the new arrivals are crowding their way farther up the rich unoccupied valleys of Agusan and Tubay. On the other hand, the population of the Surigao towns is moving away from the centers, where at present it has school facilities, and settling in the interior. On this matter the division superintendent says: "Another great difficulty that we have in reaching the whole population is the movement of the people to the country and the founding of numerous new barrios of 10 to 20 families. Under the Spanish Government the people were compelled to live in towns and were told where to build these towns, but now the towns are practically disappearing. There is not a town in the province that has not decreased in population since the American occupation; some have lost 50 per cent of their people." Much of this restlessness, while adding to the difficulties of school administration, is to be welcomed as an encouraging sign of progress, due to the return of peaceful conditions and to the general awakening.

Social conditions are changing as well. In previous reports the director of education has discussed the social order in the Philippines, the relations of the small well-to-do and educated class of people, the "gente ilustrada," and the great mass of poor and ignorant, the "gente baja." A change in the direction of a more democratic social order is taking place. It is hard to discuss a matter of this kind except in general terms; figures are practically unobtainable, but it appears quite certain that a middle class is growing up and that the opportunities of this middle class have been greatly enlarged since the American occupation. This class includes shopkeepers, traders, small buyers, and merchants of every description, as well as such semiprofessional classes as teachers, clerks, employees of the new transportation systems, etc. Such men have much greater opportunities for gaining enlightenment and a steady competence than the rural toiler, especially if the latter is simply a tenant, owns nothing except his plow and nipa house, and passes his life in the condition of bonded debtor to the landowner. I can not yet say whether or not the

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class of small farmers, or "peasant proprietors," is gaining in numbers, well-being, and independence. This class is numerous throughout the Ilocano territory and in some other parts of the islands, but in other provinces the rice is grown only on great estates, the cocoanut groves are owned solely by landed proprietors and cared for by tenants, while almost the entire sugar crop is raised on large haciendas by tenantry, who have no property, and whose economic condition is most unpromising. The hope of the common people lies either in possessing small farms or engaging successfully in lines of trade which will contribute generally to the commercial development of the islands. These small farmers and these traders, both of them with enough education to keep their own accounts and manage their own affairs, independent of "cacique" or middlemen, are two classes which we hope to produce in great numbers through the work of the primary schools.

The political campaign of last year preceding the elections to the Assembly and of provincial and municipal officials had in general unfortunate effects upon the school work and school attendance. In many provinces it engrossed the attention of officials whose assistance in the conduct of school work during the first months of the school year was thus lost. In a number of provinces the canvass made by candidates, representing hopes of early independence, led the people to believe that the American Government in the islands would soon cease, English be no longer spoken, and that there was nothing to be gained by sending their children to the public schools.

The conditions of public health during the last school year were favorable. An epidemic of typhoid fever was reported in one or two towns of Misamis; there was a small amount of smallpox in Tarlac; but in general the health conditions were exceptionally good. The vacation period and the opening of the present school year have seen something approaching an epidemic of cholera in the provinces of Pangasinan, parts of Tarlac and Nueva Ecija, but at the present writing this epidemic seems to be under control and likely to be suppressed within a short time. Meanwhile, under advice of the bureau of health, schools have been kept open.

The success of the schools depends in a marked degree upon the attitude of the public and especially the official class. Their successful conduct so far and their wide organization have been possible because the people have been exceeding desirous of having them. The period of revolution and insurrection, disastrous as it was in many respects, was nevertheless a period of great social awakening; even the lowest classes were so stirred that the desire for instruction became general. There has been no compulsory attendance law in the Philippines, and although municipalities, acting under the belief that they had a power conferred upon them in Spanish times, have sometimes compelled attendance by means of local ordinances, in general the schools have succeeded because of popular support. Local opinion needs to be constantly studied, interested, and informed. Division superintendents were directed this year to report with care upon this matter, which they have done. Most provinces report the attitude of officials and people as favorable, helpful, and expressive of confidence in school work. There are, however, exceptions. In at least two provinces public feeling is apathetic, while frequently in a single or certain towns of a province there is an indifference or even a covert opposition. The causes of this apathy or opposition are several and may be summarized as follows: In certain parts great ignorance and inertness characterize the population; there is no progress in any direction; the entire municipal life of the towns is neglected and inefficient, and in these places school work suffers with everything else. In certain other towns, and with certain individuals, there is an expression of disappointment with the work accomplished by the primary school. This disappointment rests largely upon the fact that the education of children seems to parents disappointingly slow. Under the system of dialect and catechism schools the child is able to acquire what are regarded as the essential rudiments in the space of about a year. In this time he learns the alphabet, the syllabary, and the catechism. This has been the primary education of many generations, and the feeling that a year or parts of two successive years is the right amount of time for a child to continue in school is deeply imbedded in the minds of parents, who want the children at home to perform household duties and to assist in the care of animals. The public school system contemplates no decisive result short of the completion of three or four years of continuous instruction. The fact that the majority of children in attendance upon the primary schools leave at the end of one, two, or two and a half years without having obtained the rudiments of education proposed,

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works detriment to the reputation of the school and makes the instruction ineffective.

The desire for dialect instruction has manifested itself particularly in the Tagalog provinces around Manila. It is perhaps strongest in the provinces of Bulacan and Batangas; it seems to be very little demanded in Cavite. Its leading exponents are several Filipino papers of Manila. This is a matter of such importance that it will be further discussed later on. Here it is mentioned merely as a cause, though not widely spread, of dissatisfaction with the public schools.

Another ground of dissatisfaction is the wretched buildings in which many of the primary schools are housed. It is noticeable that wherever a good building is erected the reputation of the school is established, and parents are anxious that their children shall attend. Externals make a great impression, and it is almost impossible to maintain the prestige of a school which is conducted in a dilapidated dwelling house entirely unsuited by its construction and condition for school work.

However, taking all things together, it may be said that the attitude of the official class is really more friendly and certainly more helpful than at any previous time; that the attitude of the people is less enthusiastic, but with certain local exceptions hardly less really interested than formerly. The people have, however, become more critical, are disposed to view the work of the schools more intelligently, and to demand substantial results. Furthermore, the presence of American Government in these islands has given a tremendous impetus not merely to public education but to private instruction as well. The towns and villages abound with private schools and "colegios," varying in nearly every degree of size and pretentiousness. As a part of the general awakening of the people and as an expression of their eagerness for wider life and opportunity, these schools are a favorable sign. On the other hand, in too many cases they are not what they pretend to be and may be even a positive detriment to the children that attend. Too frequently they are conducted simply as a means of livelihood for some man or woman who is a failure in ordinary lines of industry. These "dame schools" and more ambitious institutions draw many pupils from the public schools.

Nevertheless, I believe that the population of the islands view the public schools with satisfaction and confidence, and that this is sufficiently expressed in their readiness to sustain them by taxation, by the constant growth in the number of these schools, and by the increasing permanency of attendance.

It is unfortunate that the attitude of much of the American community and of the American press is outspokenly hostile to public instruction. The cry is the common one, that the public schools interfere with the availability of labor, train boys away from the fields, and expend large sums of money which would better be devoted to industrial and commercial development. The Manila Times in recent months has engaged in a vigorous campaign with the professed object of beating down the insular appropriations for education. It was also represented that the present educational policy neglects the practical training for life or industrial efficiency; that the money devoted to public instruction is in large part wasted; and that a radical change in the amount and character of instruction should be made. I shall have to leave readers of this report to judge for themselves as to the truth or falsity of these criticisms. The proposition can not be maintained that the bureau of education has not had constantly before its view large social and industrial aims. It is sufficient to invite attention to previous reports of the director of education, where these subjects have repeatedly been considered.[a]

So far as opposition to Philippine education is a reflection of that ungenerous and illiberal opposition to native enlightenment which too often takes possession of Americans domiciled in these islands, I believe it to be recreant to every principle of our national policy and to a due regard for justice. "Justice," in the language of Plato and Ulpian, "is the constant and perpetual purpose of

[a] See "Aims of primary education in the Philippines" in report of general superintendent of education for 1903; the topic "What we hope primary instruction will do for the common people" and succeeding paragraphs in report of the general superintendent of education for 1905; see also an address before the American Academy of Political and Social Science at Philadelphia, April, 1907, "Education and social progress in the Philippines;" published in *Annals*, Vol. XXX, No. 1, July, 1907.

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rendering to every one his own," and the attempt to deprive an aspiring and awakened people of general elementary schooling, to keep them ignorant and dependent, for the benefit of commercial interests, or to deny them liberty in the choice of their studies and professions, is palpably an attempt to exclude them from that which is rightfully theirs.

On the other hand, the director of education does not question the right of the public to hold the public schools up to a rigorous inspection, to criticise their undoubted deficiencies, to demand a showing for every dollar invested, or to require us to unequivocally face the question of whether progress is being made; whether the schools, and especially the primary schools, are succeeding.

PROGRESS MADE IN PUBLIC INSTRUCTION.

The bureau of education was organized in January, 1901; division superintendents were appointed and the work in most parts of the islands commenced during the succeeding year. Reliable school data hardly exists, however, before 1903, and our review of advance made will be confined to the intervening years. In 1903 it was estimated that there were in existence about 2,000 public schools: there were estimated to be about 3,000 Filipino teachers, and a school attendance of about 150,000. In 1904, the number of primary schools had increased to 2,233; the number of Filipino teachers to 3,584; and the school attendance for the month of March was 227,600. In March, 1905, the primary schools had increased to 2,727; the number of Filipino teachers had risen to 4,036; and the number of pupils in primary schools in the month of March, 1905, was 311,843.[a] In 1906 the number of primary schools had increased to 3,166; the number of Filipino teachers to 4,719; and the school attendance for the month of March was 375,554. In 1907 the number of primary schools had increased to 3,435; the number of Filipino teachers to 6,141; and the enrollment for the month of March was 335,106. The year just closed has seen the conduct of 3,701 primary schools, with 6,620 Filipino teachers, and an enrollment for the month of March of 359,738, or 24,632 more than in March of a year ago.[b] This is the bare record of a constant advance in the number of primary schools established and conducted, of the steady development of a corps of Filipino teachers more than twice as numerous as five years ago. As for attendance of children in school, if this is made the basis of our judgment, it rose very rapidly until the end of the year 1906, fell off somewhat for 1907, and rose again during the last year. While this falling off of attendance during the last two years is not a favorable sign, and is due in some cases to poor conditions and lack of school revenue; in others, to an unfavorable attitude of the people; it may be said that while the numbers are still somewhat less than they were two years ago, the number of children to a teacher is nearly 60, and the character of instruction has improved by the reduction of numbers. The pupils themselves are considerably further advanced and distributed in larger proportions in higher grades than they were two years ago.

THE PLAN FOR PRIMARY SCHOOLS.

These statistics of growth may now be compared with the figures which represent our goal. The primary course, as is well understood, is short; it embraces only 4 grades and can be completed by the child of ordinary intelligence if he attends steadily for four years. The aim before the bureau of education has been to establish and maintain enough of these primary schools to reach the entire Christian population of the islands, numbering over 7,000,000. This has been the plan constantly held before division superintendents and teachers since 1904; it is not an imposing programme, but it is a practical one, which would have been realized to-day had there been sufficient funds provided by the government to carry it out. During the last months of the school year just passed, by the direction of this office, the division superintendents made a careful and detailed study of their respective divisions, considering the needs not merely of every town but of every considerable barrio, and reporting upon the number

[a] The total enrollment for the year was 501,000, and the month of November, 1904, saw an enrollment of 345,018.

[b] The above statistics, it should be remembered, do not include intermediate and high schools with their enrollment, nor schools in the Moro Province. For the total instruction given the past year, see pages 851 and 852.

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of schools and the number of teachers that would have to be established in order to actually afford four years of primary instruction to the entire Christian population between the ages of 9 and 15. There are nearly 13,000 barrios in the Christian provinces and the working out of a comprehensive plan necessitated a great deal of investigation. A report of needs on the above basis was submitted by every superintendent except the city superintendent of Manila. Compilation of these reports shows that we should have, in the Christian provinces outside of Manila, 4,943 primary schools taught by 8,840 Filipino teachers, with a school attendance of approximately 469,000 children. Adding what may be supposed to be a comprehensive system of primary schools for Manila would give us nearly 5,000 primary schools, 8,200 teachers, and 483,000 children in attendance. We are thus seen at the present time to lack something like 1,500 schools and 3,000 teachers to make our system of primary instruction complete. If we had the means to open this number of schools and engage this number of teachers, with some provision for compelling a steady attendance at school of children between the ages of 9 and 15, considering the start we have, illiteracy could be practically abolished among the rising generation of the Philippines within the next five or six years.

The fact that this system is not being realized, and under present conditions can not be, is not due to the lack of a practical plan, for this was outlined by the director of education as long ago as 1904; it is not due to the absence of a system of organization adequate to carry it out, for this exists in the corps of superintendents and supervising teachers whose work covers every part of the Christianized territory; it is not due any longer to a notable lack of Filipino teachers, for these are being rapidly developed by our intermediate and high schools. It fails of realization solely for the reason that the government has not provided an adequate system of primary school finance; it is a question of more money and of little else, and the amount of money needed is not an unrealizable and unthinkable sum but an amount which the government of the islands is able to furnish and sustain. The results which have been accomplished in the last five years, and which have been briefly summarized, have been accomplished in spite of the most unfortunate conditions of school finance. Not only is the system provided for the support of primary schools inadequate, but it has been seriously interfered with by changes in legislation, and it has now reached the point where it is incapable of sustaining our present schools. We have twice as many teachers now as we had in 1903, not because we have twice as much money, but because we are actually paying these teachers a lower average monthly salary than we did five years ago. In 1904 the average monthly salary of a municipal teacher in the schools of the islands was ₱21.70; for the year just past, in spite of truly notable advance in the standard of teachers' training, it averaged only a trifle over ₱18—a sum wholly insufficient to retain in the service trained teachers or to create a teaching profession.

THE PRIMARY COURSE OF STUDY.

The main purpose of the primary school is to give children a knowledge of letters; it is to make the common people literate in the English tongue. To those who advocate "practical instruction," I reply that the most practical thing obtainable for men is a civilized community, and their most desirable acquisition is literacy. In civilized communities an illiterate class suffers a grievous handicap in the social competition. Civilized communities are civilized because they are literate. The achievement of letters marks the transition from barbarism to civilization. It is the great spiritual experience in the life of the individual, the opening of the eyes of the child, the awakening of his mind. However numerous may become the other duties placed upon the schools, the duty of caring for the physical development of the children, the duty of providing for their moral training, the duty of contributing to their industrial efficiency, however much these may come to be accepted as necessary functions of the school, the training in letters must always remain its first and fundamental office. "Litteræ et artes" may well be the motto of the school of to-day, but the training in arts must not be given at the expense of the training in letters.

The primary course covers only 4 grades, but it provides nearly as much schooling as is obtained by the average person in the United States. In addition the four years' training in reading, language, and writing, three years of arithmetic and a geography primer, the primary course has been changed within the last two years in order to increase the amount of time given to training in handicrafts. Under the plan of industrial training, outlined in 1904, the

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primary schools have concerned themselves with arts and industries native to the population of the archipelago. The native arts are full of interest for the educator, the ethnologist, the economist, or the lover of beautiful things. They vary much from province to province and are frequently narrowly localized. The objects sought are to preserve, diffuse, and perhaps perfect the practice of such of these manufactures as particularly commend themselves for their utility or beauty. These handicrafts are, and should remain, household industries in which all members of the family can participate during the spare hours of the day when ordinary occupation can not be followed. Every agricultural family is possessed of considerable intervals between the seasons of planting and harvest, when there is abundant leisure, and this leisure can well be employed in the braiding of hats, the making of mats and bags, or the weaving of fabrics. It is very noticeable that communities now possessing these arts are conspicuous for their industry and well-being. Instruction in one or more of these native manufactures is given in nearly all primary schools during the first three grades of the course. The standard of attainment set may be judged from the following regulation: Industrial work designed to increase the efficiency of pupils and prepare them for better making a living or a home will be emphasized in this grade. This industrial work may vary according to the locality, but should in all cases be carefully prescribed by the division superintendent and report made to the director of education thereon. It is recommended that boys be taught to construct useful, even though rude, furniture and be practiced in the repair of fences, bridges, houses, and other buildings. For the girls, in addition to sewing and elementary domestic art, instruction should be given in domestic science, including housekeeping and cooking, home nursing, and sanitation. Training in weaving cotton and other fabrics on the upright loom is especially recommended for the girls of this grade.

The fourth year of the primary school is taking on a somewhat distinct character. All of the instruction given aims to prepare the young men and women for useful life in the rural towns in which they reside. The language and arithmetic work are based upon the industrial activities in which the pupils are engaged, or in which they will be employed after leaving school. A series of industrial leaflets takes up successively the ordinary activities of Filipino communities. In arithmetic the work has to do with buying and selling, with loans, commissions, with postal savings-bank accounts, homesteading land, keeping simple books, and a variety of other useful and practical matters which can be better judged by an examination of the primary arithmetic made for use in this grade. Simple physical geography or elementary physics will be taught and a variety of natural phenomena closely allied to everyday life will be studied and explained, as well as ordinary mechanical devices and discoveries. The plan also contemplates a semester's instruction in hygiene and sanitation and of work by the boys in agriculture and special tool work, for keeping things in repair; and by the girls of housekeeping, sewing, and loom weaving. A special type of elementary industrial school is planned. These schools will teach only the one year—Grade IV. They will take boys and girls from the barrio schools of the town where they have had three elementary years of instruction, and by one year of special instruction help to make good farmers, tradesmen, or housewives in Filipino rural communities. Before such work can be widely prosecuted there must be a special building provided with suitable grounds and land, and there must be specially trained Filipino teachers. Current school revenues can not be spared to construct such school plants, but it is believed that this type of school will be entitled to receive benefit from the hoped-for congressional legislation setting aside for industrial schools the receipts from the sales of the public domain. Something is already being done to train the teachers. For the last two years training classes for just this work have been conducted in connection with the provincial high school of Pangasinan. Such teachers' courses are now about to be given in the Philippine Normal School and the Philippine School of Arts and Trades, and teachers appointed under scholarships for a year of study will in many cases take these courses. Many towns, which are seeking to obtain intermediate schools, would do better to make provision instead for the establishment of one of these elementary industrial schools.

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THE INTERMEDIATE SCHOOLS.

The intermediate schools were devised to fill the interval in the child's training between the brief course of the primary school and the secondary courses of the high school. Their character and studies were first outlined in a bulletin on courses of instruction of June 15, 1904, and their nature and work were discussed in the report of the general superintendent of education for 1904, pages 25–34. As a bridge between the primary and secondary schools these institutions continue the academic instruction in the ordinary branches. They were designed, however, to have a distinctive character of their own. Elementary science studies are emphasized—the first year, plant life; the second year, animal life; and the third year, human physiology. Agriculture and tool work for boys and housekeeping and domestic arts for girls are prescribed subjects of every fully organized intermediate course. In a country like the Philippine Islands industrial training can not be deferred until the high school, as it usually is in America; it must be carried down into intermediate grades if it is really to affect the standard of life and the industrial efficiency of any considerable part of the population. While in the United States trade schools and manual training schools have been generally high schools, here such instruction is intermediate. The secondary student receives much too advanced an education to ever follow a trade. Inducements in other lines of activity are too attractive, and if this teaching is to affect the class of skilled labor it must be given at least as early as in the intermediate course.

The first intermediate schools established were the reorganized high schools, which had been opened two years previously without a definite course of studies or entrance requirement. As these high schools have developed into secondary institutions, the intermediate school has continued as the preparatory department, although in several institutions—Manila, Iloilo and Malolos, Bulacan—the process of cutting out the intermediate school has begun.

In addition to these the plan has been to establish a considerable number of intermediate schools in other towns, especially in large towns so situated that children from adjacent municipalities may attend. The limited resources available for public instruction have prevented the establishment of these schools in all the places where the demand for them exists, and at the present time it is impossible to afford this teaching to an increasingly large number of children who are prepared for it and desirous of receiving it. As it is, division superintendents have organized these schools more rapidly than we have had buildings, equipment, and teachers to properly conduct them. During the last year, in addition to the preparatory departments of 38 high schools, intermediate instruction was given in 160 schools. Of this number 36 had the three grades, V, VI, and VII; 64 two grades; and 60 but one grade.

Of the entire 160, about 80 can be developed into thoroughly equipped intermediate schools. It is hard to know what to do with the remainder. They lack suitable buildings and neither the insular appropriations nor local funds are adequate to sustain them. Yet the pupils themselves are very eager. They have reached a point where a few years of instruction may fit them for lives of marked usefulness. The townspeople want the schools and it seems a mistake to suppress them, in spite of the fact that they are being conducted at the expense of primary school funds.

Each intermediate school is designed to have a shop, a school garden or farm, and a domestic science building or a model native cottage. It is difficult to get well-trained and satisfactory teachers of these subjects, and the housing and equipment are somewhat expensive. Five years ago practically nothing of this kind was possessed nor was such instruction being given, but at the present time the intermediate department of every provincial high school, with three exceptions, has a well-equipped shop. Ninety-one teachers, including the instructors in the trade schools at Manila, Iloilo, and Bacolor, are engaged in giving shop instruction. In all of these schools there is an adequate supply of bench tools and equipment. In addition to tool work there is a graded course in drawing, including the elements of geometrical and elementary mechanical drawing. The three trade schools above mentioned teach a number of trades. In 11 of these schools there is woodworking machinery, consisting of engine, circular and band saws, planer, and lathes. Eleven more outfits of machinery were ordered last spring and will be installed during this school year. Ten of these schools have now excellent shop buildings and 13 more such buildings are under construction, with 7 more projected, funds and land being in part available.

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Instruction in domestic science, which was not organized until about three years ago, has made hardly less satisfactory progress. Forty-one women teachers are at present engaged in giving this instruction to intermediate classes. A few of these have had special university training to fit them to be teachers of domestic science; the rest are women selected because of their skill in housewifery, their practical effectiveness, and their interest in the social side of Filipino life. Such instruction is now given in all but 5 high schools. In most instances special buildings have been provided, in two cases a model Filipino house has been built and a third one is in process of erection. The bureau of education supplies the outfit: stove, cooking utensils, and table service. Few features of our work have attracted more attention or have been so heartily welcomed as this instruction in housekeeping and household arts. Filipino girls are very ambitious to be good housewives and anxious that their homes shall accord with cultivated standard.

In agriculture less has been done. Here the difficulty is threefold—the obtaining of suitable farms and lands, the lack of experienced agricultural teachers, the undeveloped condition of scientific agriculture in the Philippines. Good farming lands adjacent to the sites for high or intermediate schools are very difficult to obtain. It seems desirable that such lands should also be susceptible of irrigation and of a character to admit of diversified agriculture. Many sites have been offered that are unsuitable. In a good many cases long delay is resulting from the difficulty in securing titles. We have suitable agricultural land at present only in 26 schools where the intermediate course is taught. There are 12 instructors in agriculture, most of them trained in agricultural schools in the United States, who are devoting all of their time this year to agricultural teaching and experiment. This, of course, takes no account of the very extensive school gardening which is carried on in connection with primary schools and which, while it can hardly be dignified by the name of agriculture, has had admirable results in introducing new vegetables and economic plans, as well as in training the child. Outside of the high schools conditions are such that each intermediate school must be free to elect the character of its industrial work, whether tool work, agriculture, or something else. We have one intermediate school, located at Malabon, Rizal, which is designed to be a school of fisheries. Instruction in fisheries was given in this school during a part of last year and the year before, but has recently been discontinued owing to the lack of teachers and the incomplete state of the building. This building is now finished and work will probably be recommenced in January with a teacher who has had special training in fisheries as a post-graduate student and experience in fisheries investigation in these islands. The intention is to secure students for this school from those parts of the islands where fisheries or fishing possibilities exist, and to give them an intermediate course in which the study of marine life, especially in its economic aspects, will be emphasized, and where they can be taught fish propagation in ponds and oyster culture, industries now narrowly localized about Manila Bay, which it is believed can be widely distributed through the archipelago to the great profit of the inhabitants.[a]

WHAT THE INTERMEDIATE GRADUATES ARE DOING.

A very important inquiry, and one which may well test the value of the instruction given in the intermediate school is, "What do the graduates do; do they apply themselves earnestly and successfully to useful lines of work, or do they fall into a life of useless ease or dangerous discontent as their critics prophesy?" An effort has been made to keep track of all of these graduates and record their careers.

Since March, 1905, about 3,000 young men and women have graduated from intermediate schools, 1,350 of them last March. Records as to what they have done are not complete, but what we do know of them is of interest and significance. Much the largest number have continued as students in secondary courses, over 1,800 are at present so engaged; 26 have been appointed to positions as government students in the United States; 16 have gone to the United States to study on their private means; a very large number (our records are

[a] The bureau has just published a bulletin by Mr. Wm. D. Carpenter, formerly teacher in the Malabon School, "The Milkfish or Bangos; its Culture in Fish Ponds," which will be used for instruction in intermediate schools where conditions permit the raising of milkfish.

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incomplete, but nearly 500 are reported) are teaching in municipal schools. Seventeen are reported as farmers; 11 as merchants; 8 as municipal officials; and 89 as clerks.[a]

Very few are reported as being idle or failures. A few extracts from reports of division superintendents will be of interest.

Albay.—Practically all of the graduates either take up teaching or continue in school. The demand for teachers who have finished the intermediate course to replace those of lower attainments is so constant that it is not surprising that young men prefer teaching to other occupations, particularly when it is remembered that at the same time they are able to gratify their desire to continue the study and practice of English, and, with more or less regularity, their own studies. A number of the graduates, it will be seen, have secured appointments, under the civil service, as regular or temporary teachers. These young men, without exception, are doing excellent work. There have been no very marked failures on the part of any of the graduates so far as my information goes.

Bohol.—No report of any noteworthy success on the part of any of them has reached this office. One graduate of 1907 is a merchant, trading by banca between various parts of Bohol and adjacent islands. He is reported as being successful.

Cagayan.—The total number of graduates in Tuguegarao is 19, and in Aparri 10. These young people are giving a very good account of themselves and I have yet to hear of a graduate who has proved himself to be absolutely worthless.

La Laguna.—Out of our even hundred intermediate graduates 74 are still in school, 58 in the Laguna High School, 9 in the Manila High School, 2 government students in America, 1 private student in America, 3 in the Insular Normal School, and 1 federal government student in Washington, D. C. Thirteen of our graduates are teaching in this province and 11 are following other occupations.

Leyte.—While it is too early as yet to draw many definite conclusions as to the value of the training received by the intermediate graduates, yet one fact is already apparent beyond question, namely, that the intermediate graduates are of immeasurably more value to the community than they could possibly have been without having attended our schools.

Nueva Vizcaya.—To date, 22 pupils have finished the intermediate course in this division. Of this number, 12 are still studying in other schools, 4 are teaching, 3 are clerks, 1 is a confirmed invalid and unable to study or work, and 2 are dead. Of the students, all are doing well. The 4 teachers are all in this province. One is an insular teacher, 1 has just passed that examination, and a third, the only girl graduate, will pass it as soon as she is old enough to enter the examination. Their work as teachers is good and is constantly improving. Of the 3 clerks, 1 is the deputy treasurer of Benguet Province, 1 is in the office of the insular auditor, the third is employed by the provincial government here as a timekeeper on road work, and has proved himself to be an unusually hard-working, intelligent, and trustworthy boy. Not one of these young people can be called a failure in any sense.

Samar.—All graduates from the intermediate schools are in the provincial secondary school, or are teachers, with the exception of 1 girl who is married and 1 boy who is a telegraph operator. The girl married the clerk of the court, who is English-speaking and a product of the American school. She has taken the civil-service examination to enter her husband's office. English is the language of their home. All the graduates are highly successful in their work.

Sorsogon.—The majority of the intermediate graduates who are not continuing in the secondary course are teachers. They are the best teachers we have in the division. They have, without exception, attained a larger measure of success than would have been theirs had they not taken the work of the intermediate course. The intermediate course will benefit practically all who have the ambition and energy to complete it.

Tarlac.—The majority of the graduates of the intermediate schools have gone on with their studies. Out of the 58 graduates up to and including October, 1907, 29 are still students in the secondary course, 1 is a student in America,

[a] The demand for clerical help is strong and compensation is relatively high. The graduates of an intermediate school readily pass the second grade civil-service examination, the entrance salary for appointment being ₱480 per annum, with rapid promotion for a bright young man.

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1 in Europe, 20 are teachers in this division, 3 are clerks, 1 is a gauger in the internal revenue, 1 is a landowner and farmer, 1 has enlisted in the constabulary, 1 is unknown, and 1 is unemployed. We hear much these days of the product of the schools being clerks. If we examine these clerks, we find that 1 is clerk to the division superintendent, where he is indispensable; 1 is property clerk to the provincial treasurer at ₱50, and exceedingly successful on account of his English; and 1 is in Manila in a private concern.

The following is from a report from the division superintendent of Iloilo:

"From March, 1905, to October, 1907, inclusive, 195 students and teachers have received from this office certificates of having completed the intermediate course. Of these, to my certain knowledge, 74 are students in the Iloilo High School, 5 of them having graduated from the high-school course the 27th instant. Seventy-three are employed as teachers in this and other provinces; and so far as those employed in this province are concerned, there seems to be no doubt that they will be continued on duty next year if they wish. Of the remainder, 2 are married and seem to be devoting the most of their time to housekeeping; 3 are dead; 2 are employed on local newspapers; 4 are government students in the United States; 5 are employed with the treasury bureau and seem to be doing well; 3 are students in the United States, but not under "pension;" 2 are sick with tuberculosis, and have resigned from the teaching service; 1 is employed with the chief commissary here; 1 is studying telegraphy; 1 is an officer in the constabulary; 2 are students in a medical school in Manila; 1 is a station agent on the Panay division of the railway; 2 are employed with commercial houses; 2 are farming; 1 is absolutely "no good;" and the remainder I can not just now account for, although I am sure that some of them are students and others are employed in one way or another. Very few of them, if more than the one already mentioned, have not been able to give a good account of themselves."

There are very few reports of failures, and I doubt if many schools in America, private or public, would be able to show a better record for its first 195 graduates than in the Iloilo report last given.

As a matter of fact, there is a very great demand for young men and women with a training such as the intermediate school gives, a demand which will keep up for many years and which makes absurd the assertions of a useless unemployed class produced by the schools.

THE SECONDARY COURSES.

These courses were outlined in Bulletin No. 7, June 15, 1904, and more fully in Bulletin No. 26, 1906. Four courses are at present provided. These are the course in literature, science, and history; the course in teaching; the course in commerce; and the course in agriculture. The literary and teachers' training courses are offered in nearly every high school; agriculture at present only as a course in the Philippine Normal School; commerce in only one school, the Philippine School of Commerce in Manila. The original plan of the high schools was to make them vocational training schools, and this plan is to some degree being realized. The number of students enrolled in secondary courses is still small. For the present school year (1908–9) there are reported in the first year 956, in the second year 590, in the third 232, and in the fourth 124. There have been so far 13 secondary graduates; from the Manila Normal School, 3 in 1907 and 1 in March, 1908; from the Cavite High School, 5 in March, 1908; and from the Iloilo High School, 4 in March, 1908.

As above stated, a high school is located in each provincial capital; their work is satisfactory, and in the majority of cases suitable buildings and grounds have been secured. The plan is for an extensive campus and a group of buildings, embracing central recitation building, science hall, shop buildings for intermediate department, dormitories, and agricultural farm. Judging from the number at present enrolled in the fourth year of secondary courses, 124, there will be fully 100 graduates next year. It is believed that most of these will wish to pursue professional courses, especially medicine, agriculture, and engineering. The University of the Philippines, recently provided for by Act No. 1870, is expected to make provision for this professional and collegiate instruction.

SCHOOL ATHLETICS.

Athletic sports are pursued with great interest in every division. Nearly every high school has a ball team or teams. Twice the schools have been

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recipients of gifts from the honorable W. Cameron Forbes—baseball outfits and tennis outfits to the school in each province making the greatest progress in beautifying and improving its grounds. With these sets as models the pupils have themselves manufactured a good deal of their athletic equipment; and the bats are easily turned out in the shops. Military drill is given in at least 5 provinces. In addition to tennis, the girls in several provinces are playing basket ball. Several provinces have annual field days. In southern Luzon, the Bicol provinces of Camarines, Albay, Sorsogon, and the subprovince of Masbate, hold each year a field meet which has grown into the proportions of a provincial exposition. A number of beautiful trophies have been given for the competitors in this meet. These are as follows: The Trent trophy, for baseball; the Carson trophy, for excellence in English composition; the Bicol declamation trophy; and a trophy for track athletics given by the American Hardware Company. This last year the meet was held at Nueva Caceres. In addition to the scholastic contest and the athletic meet, an agricultural and industrial exposition was held, in which were displayed modern agricultural machinery, a large quantity of which is reported to have been purchased by the farmers of the province, and an extensive exhibit of the industrial work of the schools, and the products and manufactures of the province. The occasion was much more than a school gathering; it was attended, participated in, and aided by officials and citizens of every class.

A similar baseball league exists among the teams of the cities of Manila and Cavite. Several trophies have been played for by this league—the Osorio prize cup, a set of cups given by Professor Woods of Groton School, Massachusetts, and finally a beautiful trophy to be played for for seven successive years, given by the boys of the Groton School, Massachusetts.

INVESTIGATION OF THE HEALTH OF SCHOOL CHILDREN.

Physical training is of the utmost consequence to the Filipino youth. Students are or were somewhat inclined to pass their spare time in inactive recreation, and the introduction of athletics into the schools has visibly done much to better both physique and health. More should be done and there should be systematic body training in all grades and schools. In their physical development Filipino students have much to contend with. The race itself, though small in stature, is naturally finely formed, supple, and enduring, but it is subject to a large number of chronic disorders. Besides the common epidemic diseases, there are parasitical complaints which reduce vitality and affect health, and tuberculosis and beriberi are widely spread. Many of our students suffer from ill health and physical weakness, and maintain their school work only by the exercise of indomitable persistence and eagerness. The fact that 19 intermediate graduates out of a total of 1,472 have died within one year of graduation is itself a fact of significance. Recently the health of school children has awakened great public interest in Great Britain and the United States. It has been shown that in the schools of Europe and America a large proportion of the children suffer from bodily defects and disorders, which while remediable in nature, if unattended to seriously affect the development of the child and his progress in school. In the Philippines, in addition to the disorders above cited and to common physical defects of eyesight and hearing, a large proportion of the school population suffers from mal nutrition and lack of sufficient food. The Filipino peoples are not well fed; their staple of rice is not sufficiently supplemented by other foods which yield the essential elements for bodily development and maintenance. Children ordinarily come to school in the morning without breakfast, but provided with 2 or 3 copper centavos with which to purchase a luncheon at recess. This luncheon, which is usually obtained from little stores or vendors near the school, varies considerably. I have observed luncheons which were good in character; such foods as wheat rolls or little packages of rice put up in banana leaves with chopped meats or grated cocoanut, a dried fish, or sardines, or more frequently a bowl of soup, but in many cases the lunch is a "dulce," a sweet or confection, and in nearly all cases the amount seems insufficient for the sole sustenance of the child through the long hours of the forenoon. In the city of Manila a notably successful plan has been conducted of having good luncheons served in the school building, under the management of teachers, who take turns in buying materials and overseeing their preparation. The children are able to secure a larger quantity and the food is more nutritious than that sold on the streets.

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Medical inspection of children would be desirable in all of the schools of the islands. So far, it has been attempted only in the city of Manila. During the last year a qualified physician—Dr. Anna D. Peck—was employed by the bureau of education and devoted all of her time to this examination. Many cases were recommended by her for treatment at the various hospitals, where it was given gratuitously. Among other cases were nearly 200 of beriberi. "Anemia was very prominent during the first examinations, but after the establishment of kitchens in the various schools there was an astonishingly large decrease. The general physical condition of the pupils was so greatly improved that great credit should accrue to the supervising teachers and others who began the work." Glasses were generously furnished free of charge to a large number of indigent pupils by a Manila optician. A total of 7,319 pupils, 5,459 boys and 1,860 girls, were examined. Defective vision was very prevalent, myopia in 32 per cent of the cases, astigmatism in 47 per cent, and diseased lids (largely trachoma) in 17 per cent; defective hearing existed in 7 per cent; dentist caries in 42 per cent; excessive adenoid tissue (tonsils, pharynx, and nostrils) in 21 per cent; anemia in 10 per cent; 20 per cent were affected with skin disease, and an equal number were pitted from the effects of smallpox. Bodily deformities were rare. The large amount of defective vision, bad teeth, and adenoids recommends the necessity of some provision for giving treatment and remedying these defects. This report takes no account of intestinal parasites or such chronic disorders, or of tubercular conditions.

SCHOOL DISCIPLINE.

In the school year 1903–4, corporal punishment in schools was forbidden by the general superintendent. There were two reasons for its prohibition; the belief that its practice in schools is obsolete, and the fact that under the code still in force teachers who inflict corporal punishment are liable to trial and fine. In place of corporal punishment, suspension and expulsion are relied upon, and the disobedient, insolent, or refractory pupil is promptly suspended or expelled. A small number of such cases of discipline occur each year, but the overwhelming testimony in the reports of the division superintendents is that discipline is of the best, conduct excellent, schools orderly, and teachers accorded due respect and obedience. I consider these reports to be thoroughly reliable and descriptive of the normal condition. Filipino students are generally quiet in their seats, obedient, respectful, and lovable. There is very little of that mischief-making which tries teachers in schools of many lands. Filipino children are early inculcated with the feeling of respect for parents and those in authority, a home training of great assistance to school work. On the other hand, when rebelliousness and insolence occur, it is extremely hard to deal with it in a way to help the offender. The Filipino child is loath to admit fault; if convicted of wrongdoing he is more apt to consider himself unfortunate and the victim of unhappy circumstances than to be penitent. Punishment frequently has the effect of making sullen and resentful a child whose disposition had previously appeared to be wholly sunny and amiable. These, as well as other considerations, recommend the expulsion of offending pupils.

Another common student offense is a school strike. Pupils when offended by a teacher will frequently, in a considerable body, leave the school. Their idea seems to be that by so doing they will put themselves in a position where they must be treated with and conceded to in order to induce their return. The certainty of injury to the reputation of their school, and the prospect of the loss of opportunity for an education for themselves, seem to weigh little with them at such times. Such an attitude is intolerable and can not be considered or recognized if the dignity of instructors and the good order of the school are to be protected. The position of this office, in all such cases, is that students who thus inconsiderately leave school for the deliberate purpose of injuring and embarrassing their teachers, must abide by the consequences of their action. They will not ordinarily be readmitted. In certain cases such action of students has had support and encouragement in local feeling. In such cases the school itself should be closed and the instruction withdrawn. As long as teachers and means are limited and must be withheld from many deserving communities, policy and economy dictate that schools should be located only in places where the support of students and people are all that can be desired, and of such places there is a multitude.

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EXCURSIONS OF TEACHERS AND PUPILS.

During the year a number of camping or traveling excursions were made by teachers and pupils. In Christmas holidays a party of young men students from the Malolos High School, with three of their instructors, made a trip to Manila, and from there to Laguna de Bay, where they visited Calamba, the birthplace of Doctor Rizal, and the hill country and waterfalls of La Laguna Province. The diaries kept by these boys show how stimulating this experience was. A personal acquaintance was made with neighboring provinces and with historic places. Much of the way the boys walked; they cooked their own food, slept in the tribunals or town houses, and kept their expenses at a minimum. Such excursions of pupils and teachers, which are thoroughly established institutions in Germany and Japan, are of the highest value, and bring teachers and pupils into that close and helpful contact which is the ideal relation of school life.

Another established excursion point is the Limao Forest Reserve, across Manila Bay, on the slopes of Mount Mariveles. In November, during the Thanksgiving recess, a large party, made up of science pupils and of the Manila and Cavite high schools, visited this reserve for the purpose of forestry study and collecting. The trip occupied a number of days, during which the boys camped in the forest and had what was for many of them a novel experience. Another excursion to Limao was made by the teachers and attendants of the Manila Vacation Institute.

During the Teachers' Institute in Rizal Province a number of trips were made by the teachers; one to Montalbon, where there are interesting caves; another to Malabon and Navotes, where they saw the industries of sugar refining, tobacco making, and fish culture in artificial ponds. At the conclusion of the institute a group of 8 teachers accompanied the division superintendent through the hills to Pililla. An opportunity was thus given them to see the vast extent of uncultivated land in the province open to homestead. "Special attention on this trip was given to hill agriculture. A nursery containing 250,000 maguey seedlings was visited at Antipolo; the camoteng cahoy (tapioca plant) was studied; and the sabutan[a] and its uses were given special attention at Tanay and Pililla. The teachers received a most cordial welcome wherever they went, and by their enthusiasm and good conduct added in no small degree to the prestige already enjoyed by the public schools."

THE SCHOOLS AND THE ENGLISH LANGUAGE.

All instruction in the public schools covered by this report is given in the English language. From the organization of the schools methods of translation have been avoided, and a knowledge of the language is acquired by its constant use and repetition. The child who enters schools entirely ignorant of English will understand ordinary directions of the schoolroom within a very few days; after that he picks up the language rapidly, and by use of the chart and primer he learns to read, to write, and to speak it at the same time. A child, under favorable conditions of instruction, may learn in the course of the school year to read and write about 250 words, with a conversational acquaintance of nearly as many more. This is considered a good foundation, but it is obviously of small value to the child if he is to stop here. It is observable, however, that second-grade pupils use their English pretty well, are able to carry on a conversation upon limited topics with a stranger, tell him about their town, and give him directions. By the time a child has completed the third grade he has secured a knowledge of the language which will remain with him, and which he will constantly amplify after he leaves school. It is common to meet young men and women, engaged in small commercial pursuits, who speak very good English and are able to use it for reading and writing, but who no more than completed the third year of some primary school. The aim in the primary course is to give the boy and girl enough English so that they can read an ordinary book or newspaper, and gain a reading and writing habit. I think this can be accomplished by the primary course, although results have not yet been fully demonstrated.

The primary school can not, of course, make a finished literary scholar, but if it can give a child a training in letters to the point where he can read and

[a] A variety of pandon especially valuable for hat braiding.

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write upon ordinary matters and profit by the newspapers, keep his accounts, and conduct his own commercial transactions and be able to appreciate and assimilate to some extent the news of the world, he will be a truly literate man and will not go through the world a mere clod. Children who are only graduates of a primary school will not speak or write wholly correct and grammatical English, but those who make their deficiencies the ground for depreciating their attainments and the work of the schools should recall the undeniable fact that the ordinary American citizen—farmer or mechanic—can not write a letter free from errors of punctuation, capitalization, grammar, and misspelling; yet who is prepared to deny that his schooling is not of the utmost importance to him, not only in the exercise of his duties as a citizen, but for the intellectual life which it affords him and for the conduct of his practical affairs? Or, to use another illustration, the English spoken by Filipino boys and girls just out of school is unquestionably better, superior in grammar, vacabulary, and accent to the Spanish that the majority of Americans in these islands are able to speak and write. But poor as American-spoken Spanish is, the immense advantage that it gives to a foreigner in this country is undeniable. The same is true of Filipino-spoken English. The object of the schools, it is granted, must be to impart correct and not corrupt English, to teach the youth to speak it and write it colloquially and freely, and this ideal must never be lost sight of; but meanwhile the tremendous practical advantage of every increased means of communication between the native and foreign elements is too frequently unrealized. Communication of ideas and not of polished phrases is, after all, the object, and when the means of this communication between all peoples in these islands has been fairly well established through the medium of the English tongue, then in great part the present strife and variance will cease and we may look for that better understanding, that increase of mutual consideration and respect, which is so greatly to be desired.

It is impossible to accurately estimate at the present time the number of Filipino people who have a knowledge of English. There are many thousands of children and young people who speak it to the degree above discussed, and these young people are found in every town and in every considerable barrio, so that a stranger entering almost any Filipino community now rarely has difficulty in finding some small person to act as interpreter and adviser. There is also a large class of young men and young women who speak English surprisingly well, and this includes nearly all of those occupying official or important commercial positions. Of the adult population, including persons of mature years and social influence, the number speaking English is relatively small. This class speaks Spanish, and as it is the most prominent and important class of people in the islands, Spanish continues to be the most important language spoken in political, journalistic, and commercial circles. The class of young people who have been educated in English in the public schools is only beginning to make its way into the active life of the country. Another ten years will tell very greatly in the relative importance of the two languages. Meanwhile, the question is disturbing many minds, "What is to be the ultimate language of this people as they attain a common consciousness and solidarity?" This question has been much discussed within the last two or three years. At the time of the American occupation there was a general feeling among Filipinos that the knowledge of the Spanish language had been deliberately and wrongly withheld from them by the sovereign country. English, as the language of the new sovereign nation, was asked for in part as a political concession. When it was proposed to bring American teachers to the islands to impart this instruction, the number proposed by the general superintendent was 500, but this was raised to 1,000 at the earnest solicitation of Filipinos in order that there might be an American teacher for every important pueblo of the archipelago. Thus, at the very outset of educational work, English was decided upon as the language of instruction as a matter of joint agreement, and if there is dissent now in some quarters from making English the language of instruction there was not then. The spread of the English language has gone steadily on. The results are undoubtedly cumulative. It was more taught and more spoken last year than the year before, and this coming year will see a greater extension of it than last year saw, yet it still has active rivals as the language of use and instruction. It is probable also that there has been some decline of interest on the part of the adult population in the English language. This is attributable to several causes. In the first year of the organization of this bureau the adult population of the towns eagerly sought opportunities to learn English. Night schools were opened in the city of Manila in 1900; later in nearly all the towns

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of the archipelago. In August, 1904, there were 501 such classes, with an enrollment of over 1,800 people, most of them adult men and women. Owing, however, to the reduction of the appropriation for the bureau of education, it was necessary a few months later, in order to avoid the incurring of a deficit, to close all the night schools in the provincial towns. This was in January, 1905. It was anticipated at the time that it would be possible to reopen them the ensuing school year, but the funds appropriated for the bureau did not permit. Shortly afterwards the date set for English to become the language of the courts was postponed until January 1, 1911. This action, while recommended by the fact that a large number of judges and practicing attorneys were insufficiently trained in English, had a very unfortunate effect upon public confidence in the ultimate adoption of English as the official language of the government. Previously there had been a general expectation that English would be made the official language throughout the administration. By an act passed in the last decades of the Spanish Government the knowledge of Spanish was made a necessary qualification for municipal office. The Filipinos had regarded the adoption of English as the official language of the courts in the light of past experiences and had been exerting themselves accordingly. After the passage of the above legislation such activities largely ceased. Not entirely, however, for in some towns night schools have been conducted and paid for by private subscription, while in Manila night schools supported by the city have continued with good results. It seems highly desirable that night classes in the provinces should be reopened. Such classes should be limited to a certain number of weeks during the winter months when the people have most leisure to apply themselves. They should aim at definite results and follow and complete special courses of work. Authority exists under the law for the director of education to pay for such instruction, though no definite amount of money was furnished by the present appropriation bill. If, however, funds can be spared from some source, this instruction will be resumed during the coming winter.

The extension of the knowledge of English among the adult people is believed to be a matter of the utmost importance and one meriting renewed attention. It is to be noted that with the increased study and use of English there has been an increased study of Spanish. I think it is a fact that many more people in these islands have a knowledge of Spanish now than they did when the American occupation occurred. As already remarked, an immense impetus has been given to private institutions where the instruction is largely in the Spanish language. The general demand upon clerks is for a knowledge of both English and Spanish. Through the great increase in number and circulation of newspapers and periodicals, there is now much more reading of Spanish than formerly. But in spite of these facts it is believed that the use of Spanish here will wane; it is unsupported by Spanish-speaking countries adjacent to us. On the other hand, as has been frequently stated, English is the common language of every port from Japan to Australia and Suez. The chance to make Spanish the language of the islands existed half a century ago, but it is gone to-day. So far as known to me, Spanish is the language of the common people in only 3 communities—Ermita, a district of Manila; Cavite, and its suburb, San Roque; and the Christian colonies of Zamboanga and Cotabato, where a corrupt Spanish dialect called "chabucano" is spoken. The new generation, which will be foremost in the affairs of the islands in another ten years, will not use Spanish for ordinary purposes, and their influence will be decisive. It will cease to be the language of the courts on January 1, 1911. It is rapidly ceasing to be the medium of administrative correspondence. Probably its longest official use will be as the language of the Legislature.

THE FUTURE OF THE NATIVE DIALECTS.

How will it be with the native dialects? Their number is generally recognized as a cause of division; their continuance is an obstacle to the attainment of nationality. Few Filipinos, even those who have a scholarly interest in these dialects, advocate the continuance of them all. A common medium of communication is recognized as essential. The present representative government would hardly have been practical had it not been for the fact that all the members of the Philippine Assembly can communicate in Spanish. The growth of common consciousness in recent years has been possible because a limited number of individuals in every community speak this foreign tongue. There are two

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supposable ways in which a Philippine language might be produced: First, by selecting one and suppressing all the others; second, by thoroughly fusing all these dialects, retaining the best elements of all.

As regards the first plan, many look to the Tagalog as the ultimate Philippine language. It has the advantage of being spoken in those provinces surrounding the capital. It has, moreover, been most influenced by other tongues. Many years ago it was pronounced by the great German philologist, William von Humboldt, to be the richest and most perfect of all the languages of the Malayo-Polynesian family. It is, however, spoken only by 21 per cent of the Christian inhabitants of the archipelago. The Visayan, in its several dialects, is spoken by more than twice as many. More than this, the Tagalog, in the capacity of extending his territory and influence, is surpassed by several other peoples. There is not, and there has not been for years past, any considerable expansion of the Tagalog people into new regions. Where they are to-day, they were at the time of the Spanish conquest, with the exception of the towns of southern Nueva Ecija and a part of southern Zambales. But meanwhile the Visayan peoples have had an astonishing growth. In 1735 the entire bishopric of Cebu, embracing the islands of Samar, Leyte, Bohol, Cebu, Panay, and northern Mindanao, yielded only 8,114 tributes, indicative of a population of less than 50,000 souls. At the opening of the nineteenth century they numbered only 100,000. In 1903 they were enumerated at over 3,000,000.[a] Their expansion still goes on. They are settling up northern Mindanao, and as the present uninhabited portions of great islands like Palawan invite settlement, it will be the Visayans who colonize them.

On the north are extraordinary emigrants, the Ilocanos. In nearly all the towns of Ilocos there is an annual "swarming." Whole communities move out at once and settle in the rich valleys of the Cagayan and Magat or in the fertile plains of Nueva Ecija, Pangasinan, Tarlac, and Zambales. Here is a people speaking a language very dissimilar from Tagalog, who will dominate northern Luzon, if they do not already do so, down to the provinces of Pampanga and Bulacan. It is impossible to believe that Tagalog ever will or can make progress among the Ilocanos. On the other hand, no Filipino people is more desirous for English instruction than the Ilocano or have better prospects of obtaining general literacy through the public schools. In view of these conditions, I see no chance of Tagalog becoming the language of the archipelago by the natural ascendancy of those who now speak it.

On the other hand, the possibility of making a common language by the systematic and scientific fusing of them all seems even more visionary. Filipino scholars interested in the development of the Tagalog language have adopted a shortsighted policy. In a chauvinistic effort at linguistic purity, they are trying to eject from the language all words of foreign origin and to substitute circumlocutions or words of new invention. It may be that they are following the example of the Tagalog classical poet, Baltazar, but this is not the way in which the great languages of the world have grown and spread. Supposing that Englishmen of the time of Henry II had persistently cast out from the Anglo-French speech of their day every word of Norman or Latin origin, and suppose this practice had gone on through the generations since, what would the English language be to-day? English has grown, as every other great language has grown, by adopting and assimilating the words of other languages. The policy adopted by Tagalog scholars for "purifying" and perfecting their own speech spells its ultimate sterilization and death.

Up to the end of Spanish rule the Philippine languages were growing by the absorption of Spanish, and if this process had been assisted by the schools the result would have been striking. I have before me a little compendium of the Visayan language as it is spoken on the island of Masbate, prepared some years ago by a young Filipino scholar. This little volume contains at a rough count 514 words, of which at least 184, or one-third, are Spanish or Spanish corruptions. Of other words are a number borrowed from the Sanskrit, Arabic, and Chinese. The Spanish terms embrace such names as days of the week, months, many foods, occupations, house furnishings, articles of clothing, tools, some domestic animals, some wild animals, many vegetables, nearly all words that relate to the schools and public buildings, and administration, all names for foreigners, and all proper names. The words of Malayan origin include numerals, parts of the body, pronouns, nearly all birds and fishes, many natural objects, and the verbs and adjectives with very few exceptions. This instance may indicate that the present effort to develop the Philippine languages by

[a] See "History of the Population" in Philippine Census, Vol. I, pp. 439–440.

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casting out the foreign element can only result, as it is already doing, in making them unintelligible to the mass of the people, and in robbing them of essential elements of strength, richness, and utility.

Feeling in favor of the use of the dialects found expression in a proposed law of the last session of the Legislature providing for their teaching. This proposed bill, in the form in which it was exhibited at one period of its discussion, provided that instruction in the dialect of any locality might be given in the public schools on request of a local school board and municipal council. The idea of the bill was said to be not to disturb the present curriculum in English but to put in the dialect teaching where locally demanded as an additional subject. Although many friends of the public schools felt that such a measure as this would weaken their teaching and occasion general misunderstanding, my own feeling is that it would not have done harm and might have introduced instruction of present benefit. It is a very easy matter for a child of the second grade to acquire facility in reading and writing his dialect, as the syllabary used for the purpose is phonetic and very plain. Some reading of proverbs, folk stories, and poetry, of which there is a considerable in several languages, could have followed. But the advocates of the measure inserted a final clause that the municipalities should have the power to decide in what language public instruction should be given. As English was apparently to be included in this scope of their authority, such a power would have afforded possibilities of immeasurable confusion, and if generally exercised for excluding English, would have undone the work of eight years and rendered useless over 6,000 teachers trained to teach English. In this form, therefore, the bill was reactionary and unacceptable and was fortunately disapproved by the upper house of the Legislature.

If we may judge by what is taking place in all parts of the globe, the Philippine languages will disappear from use. There is a common belief that these mother tongues do not die, and that instead the dominant intrusive population always ends by adopting the indigenous speech. While this may be true as applied to certain great historical peoples, nothing is more untrue if we survey the world at large at the present day. I have such good authority as the word of W J Magee that in the century just closed the number of spoken languages of the world decreased one-half. Their disappearance is being constantly accelerated. There are scores of languages throughout both Americas which today are known only by name. Even in such a continent as Africa so eminent an authority as Sir Harry Johnson states that no native languages will persist except Swahili (itself partly Arabic) and Hausa. Elsewhere the languages of Africa will be English, Arabic, French, Portuguese, and Italian. The multitudinous dialects of the Philippines will likewise disappear. They will leave with us an enormous number of place names, many of which are older than the languages at present spoken in the locality of these names, names of trees and plants, and a considerable additional vocabulary descriptive of objects native to Malaysia. These will all become a part of the English language spoken throughout the archipelago. This result will come even though no more is done than is being done now. It has already proceeded far enough so that it could only be stopped by a complete reversal of policy.

THE DEVELOPMENT OF RACIAL CHARACTER.

I can not hope that this prediction will be welcome to a considerable proportion of thoughtful Filipinos, who are desirous, among other aims, of preserving the best qualities of native character. These gentlemen fear the general adoption of English as likely to result in the loss of the "Filipino soul."

But the triumph of English as the common speech of these islands does not by any means imply the suppression of the native character, or the sacrifice of any of its excellencies. These fears arise from misunderstanding. The educational policy in these islands is not to Americanize or Anglo-Saxonize the Filipino. It is not a policy of "assimilation." Assimilation is fast becoming a discredited policy, though it has been a popular programme with the friends of more than one backward race who have taken for their standard the stature and quality of the white race. French colonial administration has discussed and experimented with the assimilation idea. It was put forward by the Spaniards in the last decades of their rule in the Philippines, and it was then a popular conception with the Filipinos themselves, although it should be noted that Rizal possessed the insight to see all its weakness and to refute it in his second great novel, El Filibusterismo. In my own view the policy of assimilation in

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all dealings of the white race with other races is a profoundly mistaken one. Where accompanied by compulsion is it absolutely indefensible. Not by force but by persuasion is the great work of civilization to be accomplished. Profound differences of character separate the different races of the world, and these can not be broken down by an experience of education. The process of racial differentiation has been a very long one, and while it has left all mankind essentially one it has left the different races of people differently endowed. While no race seems devoid of any human quality or passion, or incapable mentally and spiritually of experiencing the highest emotions, these emotions differ in intensity in different races. Their ensemble is different in one case from what it is in another. The white race has frequently claimed for itself a superior mixture of qualities of every kind, but what is more probable is that other races, even if they do not possess an equally good ensemble, possess at least certain superior qualities in a higher degree. At least every race has some elements of strength and qualities of greatest serviceability, and its highest development does not lie in a slavish conformity to the character of another, but in the wise and persistent cultivation of the best qualities of itself. Our effort here is not to make Filipinos into Americans but to make better Filipinos. We do not insist that the Filipino qualities of mind and heart shall become those of foreign peoples, but that everything shall be done to cultivate the inherent excellencies of the race in the best possible way. Moreover, there is that assimilation which absorbs one people into the life and character of a stronger race, and that assimilation by which a people possesses itself of new benefits of civilization and utilizes and transforms these in accordance with its own genius. It is by that latter kind of assimilation that progress is made, and there is no question that the Filipino people possesses this power. They form a race which is destined to survive, multiply, and make its influence felt farther than the human mind can forecast. Like other Malayan peoples fortunately situated, this race is rapidly multiplying; it is at least 14 times as numerous as it was when the Spanish conquered the archipelago, and 5 times as numerous as it was at the beginning of the last century. Through all its history it has proved itself capable of rapid cultural advance. It has been continually acquiring and assimilating new elements of civilization. Its indigenous culture, of which certain elements speak with favor, was left behind long ago, when their forefathers progressed beyond barbarism. The primitive Malayans were forest-dwelling communities without farm animals, who burned their primitive "caingins" and planted their simple crops with their hands; they worshipped the spirits of the woods and the ghosts of the departed; they possessed practically none of the arts of civilization, but through successive contact with the civilization of the Hindu, the Arab, and the European, these Malayan peoples have steadily developed in culture until in the Philippines they approximate the civilization of western Europe. The lesson to be learned from this, their own history, is not to turn back to their past for ideal or light, but, confident of their own power and virility, press on in the effort to bring up their life and civilization to the highest standard of the Christian world.

THE TEACHING OF ETHICS.

This discussion of the Filipino character brings us to the subject of moral instruction and character training in the public schools. Little has been done so far by means of direct or didactic teaching. The influence of high-minded teachers, the constant effort to maintain a high standard of conduct of all teachers and pupils, the prompt punishment of common school faults, constantly exert an influence in favor of character training which, while it can not be estimated, can not be doubted. There should be, as well, intelligent and systematic instruction in ethics. Enough has been previously said to indicate my own opinion that this instruction should be built upon a clear and sympathetic understanding of the Filipino character and its own best standards of conduct. Certain admirable virtues are taught by the training given in every home, but it is undeniable that certain essential virtues are neglected in this home training. On this point the school has a responsibility which it has not adequately met, partly because the difficulties in the way are great and partly because intelligence and understanding have been lacking. Obviously moral training can best be given by the Filipino teachers themselves. Some definite requirement as to time and amount within the course of study will have to be made, and then Filipino teachers will have to be prepared by courses in ethics and pedagogy to give this instruction to the children. One

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of the most necessary qualities to inculcate in the Filipino pupil is the love and habit of self-reliance. The feeling of dependence, the desire for assistance and protection, is inherent in the race. It is a weakness that has been greatly encouraged by a paternal government. It expresses itself in countless ways, but in no way more noticeably than in the fervid seeking for official position and official privilege.

GOVERNMENT SCHOLARSHIPS.

This discouragement of the practice of self-reliance comes close home to the bureau of education, because of the large provision that has been made for student scholarships. These are of several kinds: Government scholarships in the United States, the number afforded by the current appropriation bill being 130; scholarships in the Philippine Medical School, one for each province of the Philippine Islands (Act No. 1632); nurses' scholarships for supporting young women while receiving a training in nursing; municipal scholarships provided by municipalities under the provisions of Act No. 1791; and by Act No. 1857, 100 scholarships for municipal and insular teachers to receive superior instruction in Manila.

The intent of these various provisions is undoubtedly excellent; several of them have operated in a way to successfully promote novel courses of training. The appointment of government students to the United States has done much to stimulate interest in the public schools. Moreover, all scholarships provide that the person benefited shall render service at appropriate compensation to the government or municipality providing the scholarship for a period equal to that of the scholarship. The provision last noted, whereby 100 deserving teachers are to secure superior instruction in Manila, is welcomed for the benefits it will bring to the schools, and the teachers will undoubtedly make good return for the money spent upon them. At the same time, it is believed that all of these acts of assistance on the part of the government are wrong in principle and that they are an example of paternal aid which has an unfortunate effect upon the person benefited and upon the community at large; that they lead to the seeking of these favors on other grounds than merit, and create the conviction that the government owes such benefactions to certain fortunate individuals. It is recommended that in all cases assistance be reduced to the minimum of absolute necessities, that the obligation of making return by hearty and conscientious service be kept constantly before the students benefited, and that appointment to such positions be made on merit alone. It is regrettable that many of the students appointed to scholarships in America have failed to show a commendable spirit of economy, and in numerous instances have exceeded their allowances, incurred debts, and spent money in disregard of the duty they owe to the country to make the most economical use of the funds provided for their education.

Reporting upon these scholarships in detail, provision for government scholarships in America was made in 1903 by Act No. 854, and was for 100 students. Succeeding appropriations increased this provision until the number of students under appointment finally stood at 188. The standard of scholarship of the early appointees was too low for them to fully benefit by the instruction in American institutions, and in 1907, by resolution of the commission, the examination for appointment was made the equivalent of the completion of a secondary course of study. This higher standard has resulted in very few appointments during the last two years, but there will probably be a number of competitors able to qualify at the end of this school year.[a] Of 196 students who have been appointed to these scholarships 2 have died while under appointment, 5 have been obliged to return on account of ill health, 7 have been dismissed for misconduct, 60 others have returned from the United States, their terms of appointment having been completed, and have been appointed to government positions, 40 in the teaching service, 11 to clerical positions, 2 to the position of subinspector in the constabulary, 2 as draftsmen, 1 as a pharmacist, 1 as court interpreter, 1 as agricultural foreman and inoculator, 1 as computer in the bureau of lands, and 1 as private secretary to one of the congressional delegates. The majority of these young men have now been under appointment from eight to ten months. An effort has been made to learn of the quality of their service; 6 are unreported upon, the service of 5 is reported as "poor," 7

[a] The actual number of appointments for the different school years is as follows: 1903–4, 105; 1904–5, 40; 1905–6, 37; 1906–7, 10; 1907–8, 4; total, 196.

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as "fair," 22 as "good," and 20 as "superior." There will return to the islands this summer 43 students, 4 of them being young women, of whom 11 have taken courses in civil engineering, 3 in mechanical engineering, 1 in chemical engineering, 11 in agriculture, 6 in teaching, 4 in medicine, 2 in domestic science, 1 in architecture, 2 in law, 1 in forestry, and 1 in pharmacy. Under the terms of the law these students may take not more than sixty days of vacation after their arrival in Manila and are then under obligation to accept appointment to a suitable position in the government service and to enter appropriate civil-service examinations to secure eligibility for regular appointment. Not counting those students who are returning this summer, there remain in the United States 76, in addition to whom there are 3 who have resigned their scholarships and are in the employ of the Federal Government; there are also 4 others, recently appointed, who are awaiting transportation to the United States.

In addition to the 10 original scholarships in nurses' training, it is gratifying to report that 4 others were privately provided last year, and 2 other young women took this course at their own expense, a total of 16. For the present academic year provision has been made for 30 government scholarships, and 9 other young women have been provided with scholarships through private generosity. Of this course in preparation for nursing the superintendent of the Philippine Normal School says:

"The credit for the initiation and organization of the course is due to Miss Coleman, who was in charge of the dormitory for women students. These young women studied under the direct supervision of an American trained nurse, who gave them instruction in physiology and hygiene and the theory of nursing. They studied English and cooking in the regular classes of the normal school, and went to one of the hospitals of the city for practical nursing each day during the latter part of the year, according to a regular schedule.

"This class of work is an innovation in Filipino life, and many doubts were expressed as to the ultimate success of the venture. Thanks, however, to the ability of Miss Coleman, the originator of the scheme, and to the tact and capability of Miss Layton, the nurse in charge of the girls, the experiment may be pronounced a complete success. The young women have displayed great interest in their work, along with real aptitude for it, and all have made satisfactory progress. They are now in active demand as student assistants in various hospitals in Manila."

Of students appointed to study in provincial high schools under municipal scholarships, this office has no record, but it is believed the number is small. Twenty-four students are known to be holding municipal scholarships for study in this city, 14 in the Philippine Normal School, and 10 in the Philippine School of Arts and Trades.

MUSIC.

Music plays a large part in the life and pleasure of Filipinos. The bureau has constantly sought to give proper musical instruction in the schools. The following standard has recently been adopted for primary grade pupils:

1. To use the voice softly and with attention to breathing and enunciation.
2. To sing the scale correctly and recognize its intervals.
3. To read simple music at sight in the keys of C, G, D, A, E, and F.
4. To write simple phrases in the above keys.
5. To sing readily exercises in 2–4, 3–4, and 4–4 measure.
6. To sing sharp four, sharp five.
7. To know the names of the notes and the pitch names.
8. To be able to sing simple two-part melodies.

A further standard has also been prescribed for intermediate schools. In the high schools the work is largely chorus singing and no definite amount is required.

A highly trained teacher of music engaged in 1903 has acted as supervisor of music for the islands, and is at present instructor in music in the Philippine Normal School. Due to her efforts, a considerable interest in correct teaching of music has been developed. The aim is to have in each province a teacher competent to give this instruction correctly, who shall teach these subjects regularly in the high schools and, at the vacation normal institute, instruct all Filipino teachers. At the present time there are 10 teachers assigned to musical instruction and supervision.

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DRAWING.

The Filipino child is gifted with a great liking and frequently with real talent for this art of expression. A graded course of drawing is provided for primary schools, including pencil and charcoal drawing, sepia, and small amount of work in colors. Up to the present time it has not been possible to introduce this work fully, but the effort is now being made to realize it in at least all third and fourth grades. In the intermediate course the first year should be devoted to line drawing and lettering, the second to geometrical drawing, and the third to simple mechanical drawing. A considerable proportion of high schools are provided with drawing instruments for this work, but there is an insufficient number of teachers to give this instruction in all.

THE KINDERGARTEN.

Kindergartens were established in the city of Manila in 1903. In 1905 six kindergartens were conducted in this city and there were also kindergartens in Iloilo and Cebu. These were all taught by American teachers. The work done was excellent and the results to the children and upon the families of children were interesting and valuable. Owing, however, to the limited number of children that can be reached by a single teacher and the consequent expensiveness of this instruction, there seemed small chance of making the kindergarten system general. In 1906, on the recommendation of the city superintendent, the kindergartens in Manila were closed, with the exception of one in the American school. Since that date a kindergarten has been conducted in connection with the Philippine Normal School. It would be highly advantageous if Filipino children generally could receive a year of kindergarten instruction before commencing the primary course, but there is no present way of providing it. At one time the director had under consideration a plan for establishing in towns and villages outdoor afternoon classes, true "children's gardens," for younger children not yet admitted to the primary schools. If there were suitable playgrounds in all towns such gatherings of the little people for an hour or an hour and a half in the cooler hours toward evening might be held during the dry months. These gatherings could be given up to conversation, instruction, stories, games, songs, informative plays, and lessons in politeness and conduct. Such classes would be highly welcome to the people; they would afford a valuable preparation for children before entering the primary school, and the social effect upon the community would be excellent. In time, as schools obtain suitable, well-shaded grounds, it may be possible to hold such classes, using regular primary teachers trained to this additional service. In Iloilo and Cebu the instruction previously given in kindergartens seems to have been especially well received. Three kindergartens taught by Filipino teachers were conducted in the city of Cebu last year.

EDUCATION OF GIRLS AND WOMEN.

The Philippines are fortunate among countries of the East in the position occupied by women. In the social life of the country they have a place as influential and respected as that of the men. The woman's influence in the household, in the direction of household affairs, and in the business interests of the family is preponderant. Filipinos seem to regard the judgment of the women as being cooler and wiser and it is ordinarily adopted. Women are engaged in all sorts of occupations; besides being venders and hucksters, they are shopkeepers and frequently commission merchants on a considerable scale. There are many women of wealth who hold property independently and manage it themselves. This is a condition which gives the Philippines a great advantage over other oriental countries. On the other hand, while the woman's influence is fully equal to that of the man in domestic and practical affairs, they have not enjoyed equal privileges of education until recently. Lately a number of women have taken law courses in private schools of Manila, though I am informed that none has passed the bar examination. There are 3 women students in the Philippine Medical School. Of 6,804 Filipino teachers, insular and municipal, regular and temporary, 2,108 are women. A considerable number of young women fill positions in public offices. The director of civil service states that during the last five years 1,371 young women have entered civil-service examinations in English, of whom 269 passed a teacher's examination and 153 a clerical examination. Since the organization of a modern telephone system in Manila, they have filled the positions of telephone girls, and in the

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stores of Manila there is commencing to be an increasingly large number engaged as accountants, clerks, and saleswomen. Girls do not, however, attend the public schools or any schools to the same degree as do boys. The disparity between the sexes in the primary schools is 137,974 girls to 221,923 boys. In the intermediate schools the difference is even greater. There were last year 2,898 girls and 10,481 boys in such schools, while in the secondary course, out of 1,324 students only 240 were young women. While there may always be a greater demand for highly trained men than for highly trained women, social improvement in the Philippines depends upon an educated body of women no less than upon a similar body of men.

THE INSULAR SCHOOLS IN THE CITY OF MANILA.

THE PHILIPPINE NORMAL SCHOOL.

Provision for this school was made in the act organizing the bureau of education, and it was first opened in 1901 with a total enrollment of 349 students. In 1902–3 the number of students was 398; and 9 pupils, who had previous instruction in Spanish schools and were somewhat advanced in subject-matter, were given diplomas of graduation, although there was no definite standard of attainment; in 1903–4 the enrollment was 455 students, and of this number 14 were graded as secondary students when the prescribed course of study went into operation. The attendance on this school has steadily risen each year, being 554 in 1904–5; 645 in 1905–6; 733 in 1906–7; and 809 in 1907–8. What is even more gratifying is the higher standard of work attained. In 1906–7 200 of these students were secondary pupils, while in the last school year the number was 286. The secondary courses are very thorough, and the instruction, equipment, and standard are believed to be on a par with that of the best high schools of the United States. Including the early graduates there have been a total of 99 normal graduates and 4 graduates from a high-school course. Graduates from the normal course are placed by the bureau of civil service on the list of eligibles for appointment as insular teachers without subsequent examination. For the practice teaching, as well as for model and experimental purposes, intermediate, primary, and kindergarten departments are conducted. Those taking the normal-school course have practice teaching in the primary grades in their third year, and in the intermediate grades in their fourth year. The school since its organization has been housed on the "Exposition Grounds" in Ermita in buildings erected by the Spanish Government in 1895 for a Philippine exposition and subsequently used as a school of agriculture. These buildings, while for the most part of a temporary character, have been kept in a state of repair and with ample and well-shaded grounds have served the purpose admirably. In a way, this school and its site on the "Exposition Grounds" has been an educational center for the work of the bureau of education. Here have been held the vacation assemblies, and the Philippine School of Arts and Trades for several years occupied buildings on the same grounds. In connection with the normal school and because no other public school in the city of Manila was affording such instruction, courses in preparation for different professions have been opened from time to time. These include a course in preparation for medicine, that for appointment as magistrate or for entrance to a law school, that for admission to an engineering school, a secondary course in agriculture, another in domestic science, and one in preparation for nursing. In addition to these, a general high-school course has also been conducted. The excellent laboratories in botany, zoology, including anatomy, physiology, and histology, in physics and chemistry, as well as the number of specially qualified teachers at this institution, have been reasons for consolidating here these varied kinds of instruction. At the present time these additional courses are more largely attended than that in teaching. Of 334 secondary students enrolled July 23, 1908, only 60 are taking the course in teaching, 75 are preparing for medicine, 33 for law, 33 for engineering, 18 are taking the agricultural course, 17 domestic science, 41 are preparing for nursing, while 67 are taking the regular secondary course in literature, science, and history.

Other professions are appealing more strongly to students in the school than that of teaching, and the fundamental purpose of the institution as a training center of teachers for the entire archipelago is not being fulfilled. One cause of this may be the fact that graduates of the normal school on entering the teaching service have received a compensation which is not attractive enough

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in view of their long course of preparation. This entrance salary is ₱600, the same being the maximum entrance salary of a clerk who has passed the second-grade English examination. A pupil who has completed the intermediate course, and has had four years less training than the normal school graduate, can pass the second-grade examination and receive an equal rate of pay. In justice to the long and superior training taken by graduates of the normal school a higher entrance salary should be paid.

The special training now being given by the normal school will be brought into some sort of relation to the work of the Philippine University, whose establishment is authorized by legislation of the last sessions of the Philippine Legislature. It would seem that the work of the university might grow in a natural manner out of the foundations laid by the normal school. Up to the present the normal school has had a history which is believed to be unique in usefulness in the career of educational institutions. By influence, in one way or another, thousands of pupils and teachers have received help and inspiration, and by the thorough instruction given a large number of young people are receiving excellent training. In addition to its other numerous services, the normal school during the last year conducted a department of correspondence teaching. This course was authorized on June 20, 1907, to be given to Filipino teachers who had completed the intermediate course of instruction. There were so recommended 634 teachers, but owing to the inadequate supply of suitable texts, so large a number could not be provided with the facilities for study and only 314 took work in English, while 19 attempted work in algebra. Of the students in the English course 168 persisted through the year, and 114 did work that was satisfactory. This first year was experimental, but it demonstrated the advantage of conducting such correspondence, especially as more and more the regular instruction of Filipino teachers by supervising teachers has to be given up.

THE PHILIPPINE SCHOOL OF ARTS AND TRADES.

Provision for the establishment of this school was made in the act organizing the bureau of education. It was opened in the city of Manila late in 1901. For two years great difficulty was encountered in securing students, and there was a lack of equipment, no machine tools having been supplied the school. In 1905 some disused stables and wagon barns on the "Exposition Grounds" were fitted up for the use of this school and the first engines and machinery procured. This change, with its equipment, introduced a new spirit into the school, which began to attract a desirable class of young men. A year ago the school moved into better quarters—the old "arroceros" grounds and shops, owned by the city—with an agreement for the use of these premises for five years. The school now has the following departments, all well equipped with excellent machinery and tools: Carpentry, blacksmithing, wheelwrighting, machine shop, wood carving, drafting, and weaving. There were 538 students in attendance last year. Distinctive trade work is given to boys and young men who simply desire to be mechanics. This instruction is given in all the trades mentioned above.

In addition, a general four-year course in manual training is given to students who desire this work as a preparation for some branch of engineering. The course embraces one and a half years of carpentry, one semester of blacksmithing, and two years of machine-shop practice, with mechanical drawing throughout. The school also conducts a normal training department for the preparation of teachers to give instruction in tool work in elementary industrial schools and in intermediate schools. The outlook for the school at present is encouraging, but the present buildings are insufficient and a permanent site and plant must be secured.

THE PHILIPPINE SCHOOL OF COMMERCE.

Until the opening of the present year this school was known as the Manila Business School. It is now an insular school and will offer the secondary course in commerce, a course which later can be introduced, it is hoped, into many of the high schools. The most serious industrial need of the archipelago is capable, trained Filipino men of business. Philippine commerce at present struggles under a severe handicap due to the undeveloped state of three factors—markets, systems of transportation, and the system of credit. The great wholesale establishments of Manila, Iloilo, and Cebu are for the most part in European, American, or Chinese hands. These large companies conduct their own trading and transportation and make loans. Meanwhile there are in every part of the archipelago excellent small business openings not sufficiently large, perhaps, to attract the European, but admirable opportunities for young Filipino

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men who are willing to commence modestly. Such openings at the present time are taken advantage of only by one class of residents—the Chinese. It is the development of these small businesses in large number that will do most to forward the economic development of the archipelago. To stimulate such an interest, to train young men for these businesses, and to disseminate intelligent information about them is the aim of the secondary course in commerce. It will also undertake to train in public finance a class of young men who may in this manner become qualified to fill positions in the provincial treasury and revenue services. At the present time the work given in the Philippine School of Commerce, while having this large plan in view, is varied and general. There is an attendance of 266 students enrolled in the following courses: Commerce and bookkeeping, 60; stenography, 35; typewriting, 25; telegraphy, 42; intermediate business course, 104. Night classes were opened in the month of July with a present enrolment of 153 pupils.

SCHOOL FOR THE INSTRUCTION OF THE DEAF AND THE BLIND.

One other insular school opened in Manila at the beginning of the present academic year. This is a small school for instruction of the deaf and the blind. A year ago an accomplished and experienced teacher was engaged in the United States, who the past year has conducted experimental work instructing a small number of deaf children at the normal school. A considerable number of deaf children have been reported from adjacent provinces, but with parents of such small means that no private provision could be made for their attendance upon an institution to give them instruction. Authority was consequently obtained to pay the expenses, not to exceed ₱20 per month, of 20 deaf children, and to open a home for them in the city of Manila. This has now been done, and at the opening there are 11 children in attendance. Provision will be made within a very short time for the instruction of blind children, of which unfortunate class there is in the islands a large number owing to the prevalence of smallpox.

SCHOOLS FOR NONCHRISTIAN PEOPLE.

THE NEGRITOS.

Outside of the Moro Province the pagan peoples may be divided, for the purpose of this report, into three divisions—the Aetas or Negritos or little black aborigines, the uncivilized forest Malayans, and the mountain dwelling Igorots.

Of the Negritos or Aetas there are probably somewhere between 25,000 and 30,000. They are found on a number of islands, including Luzon, Panay, Negros, Mindanao, and Palawan; but the largest known groups of them are found in the Zambales Mountains, in the forest and hill country of Camarines, and in western and northwestern Panay. There is an unknown number in the Sierra Madre Mountains, which extend for nearly 200 miles along the Pacific coast of Luzon, but nothing is known of them except in 3 localities, at the northern end of this mountain chain, the coast facing Palawi Island, in the mountain country between Ilagan and Palanan, and near the Pacific coast in the jurisdictions of Baler and Infanta. Indeed, the entire Pacific coast of northern Luzon has only 3 or 4 Christian towns, and has been very little explored. There are small groups of Aetas in the Cordillera of Luzon within what is properly Igorot territory. An element that once existed on the island of Mindoro has been absorbed into the Mangyan. There are a few in the mountainous parts of the island of Negros. There is a small group around Lake Mainit, Surigao, who are known as "Mamanua." Occasionally individuals or even family groups are met with elsewhere. Two statements made in regard to these little blacks have been widely repeated: First, that they are rapidly disappearing; second, that they are quite incapable of cultural improvement. Both of these statements I consider to be untrue. While the Negrito has disappeared from many places where he was found in the past, at the present time he appears to be holding his own, and, in defiance of the second assertion, in many communities he is making really notable progress considering his primitive condition of savagery. When unaffected by outside culture, these little black forest dwellers probably depend upon game and the quest of honey, wild foods and roots; they use the bow and arrow, but not the blow gun or "sumpitan," which is the projectile weapon of the primitive Malayan; their habits are strictly nomadic; at one time they probably never

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constructed anything except the rudest shelters of branches. But at the present time in many places the Negritos have partially or entirely ceased their nomadic wandering and settled down in well-established small communities. Here they have built houses, or at least permanent huts, and they have learned from the Malayans their method of forest cultivation, and to plant crops of mountain rice, maize, beans, taro, yams, and tobacco. In barter with the Christian population they exchange wax, rattan, and forest products for clothing, iron, salt, and other necessaries. In the mountains of Angat, Bulacan, they do a great deal of lumbering; in the hill communities of Camarines many of them have set out rather extensive fields of abacá. From their Malayan neighbors also they have learned primitive iron working, and in some communities fashion their own knives and arrow points. They almost always have dogs, and in some cases fowls, swine, and even a few carabaos. Now, these are very considerable steps in culture as contrasted with their primitive forest condition, and are sufficient to refute the statement that the Negrito can not any more change his savagery than the leopard his spots.

Schools have been opened for them in 5 localities—in the Bucao River Valley, Zambales; in the Tarlac River Valley, Tarlac; in the mountains back of Florida Blanca, Pampanga; and in the provinces of Camarines and Antique. The plan is to help introduce the culture of the adjacent Christian people and at the same time to give a certain measure of oversight and counsel, and by opening in the vicinity of each school a trading place protect them from exploitation which they now suffer. Some reading and writing, knowledge of money and values, calculating and figuring are being taught, and they are anxious to have these matters understood by their young people. It is believed that the Negritos may be persuaded to form more settled communities and to devote themselves more generally to agriculture. What will be the future of these little people it is somewhat hard to say. In the Camarines and in some other places they have to a considerable degree been absorbed into the Bicol population. In other places it seems, however, that they will remain communities distinct in race, although their culture will approximate that of the Christian people. In addition to the pursuit of agricultural life, they will remain the expert foresters that they are now, and with their ability to travel the woods and the mountains they will contribute to the products of the islands those peculiar to the jungle, which is their natural home.

THE PRIMITIVE MALAYANS.

On a number of islands occupied mostly or in part by Christian peoples there is an interior element who represent more or less closely the true primitive Malayan. On Mindoro these people are known as "Mangyan," on Busuanga and Palawan as "Tagbanua" and "Palawanos." In the Visayan islands they were called by the Spaniards "Monteses" or "Montescos." Some years ago I proposed as a general designation for these primitive Malayan peoples inhabiting the Visayan Islands and northern Mindanao the word "Bukidnon," a term quite widely used and meaning "hill people." This designation seems to have found general acceptance. School work has so far been conducted only among the Mangyan of western and southern Mindoro and for the Tagbanua about Puerto Princesa, Palawan; no attempt has been made to reach the Bukidnon in Panay and Negros with schools. In northern Mindanao more comprehensive work is planned. One American teacher has been assigned to plan and organize school work in the subprovince of Bukidnon, where 5 schools have been opened with Filipino teachers, and in the valley of the Agusan River 16 schools for Manobos are being taught by Visayan teachers under an American supervisor, and a normal and industrial training school for Manopo young men has been authorized.

THE IGOROTS.

For the Igorots of the Cordillera of Luzon the problem is a much larger and more important one. Here we have a mountain population of several hundred thousand souls, full of vigor and hardihood. These people are not organized in tribes but in communities or towns, some of them compactly built up and containing several thousand inhabitants. They are among the most remarkable barbarous populations of the world. In physical and mental endowment they seem to be inferior to no people in the archipelago. They have brought their steep and forbidding mountain into a remarkable state of habitableness by the construction of thousands of wonderful terraces and systems of irrigation.

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They mine gold and copper, and among their beautiful handicrafts are iron-working—spears, axes, and knives of varied form and fine workmanship—cotton weaving and dyeing, copper beating, brass casting, pottery, basketry and rattan work. During the last decades of its rule the Spanish government occupied most of this Cordillera with military forces. Cuartels or garrisons were established in many places, and these were connected by trails or mountain horse roads. Missionaries of the Augustinian and Dominican orders established missions in most of these "comandancias;" the government undertook to vaccinate the people and went so far as to attempt schools. Coffee and cattle raising were introduced.

Following the breakdown of Spanish Government and the retirement of the Spanish troops and missionaries from the Cordillera, most of the results of their work were swept away. The cuartels and missions were in many places destroyed, the roads grew up with the jungle, and when the American Government, five years later, sought to reoccupy these mountains, there was little to indicate the former presence of the Spanish soldier and missionary. Left to themselves, these head-hunting communities were then engaging in a perfect orgy of feuds. These conditions do not apply to Benguet nor to parts of the province of Lepanto, but almost everywhere else confusion and head-hunting reigned. In 1902 the American Government began the task of organizing governments for the control and benefit of these peoples. The task has been successful, and although Igorot communities still covertly take heads from one another, the best of feeling prevails between the Igorots and the Americans.

Owing to the pacific conditions which prevailed in Benguet while the rest of northern Luzon was either in a condition of insurrection or intercommunity feud, this province was the first region to secure civil government under the American rule. At the same time a considerable force of American teachers was sent there and opened schools in at least 8 of the towns. This was in 1901. American teachers were sent to Lepanto-Bontoc in 1902. Subsequently schools were opened in the former Spanish posts or "comandancias" of Amburayan, Banaue, Quiangan, and Tiagan, and within the last year at Mayoyao, Kalinga, and Apayao. Within recent months the school administration of these two provinces has been united in a single school division known as the "mountain division." It will probably be wise to unite all parts of the Cordillera in a single school division and have all school work for the Igorots conducted under one superintendent and in conformity with a single policy.

Schools for Igorots are of two kinds—industrial boarding schools, to which children come from more or less distant towns, and village schools conducted in the Igorot communities. Of the former schools 5 were conducted during the last year, at Bagulo, Benguet, for boys; at Bua, Benguet, for girls; at Alilem, Amburayan; Cervantes, Lepanto; and at Bontoc; a boarding class was conducted for the last few months of the year at Banaue, and in April a boarding school with 32 little girls was started at Bontoc. The plan of these schools is to give the children a comfortable home, food, and clothing, and a training in tool work and agriculture, as well as in academic subjects. Until the last school year there was no adequate provision for buildings for these schools. There have now been constructed a good dormitory and shopbuilding at Baguio; at Bua the girls' school is housed in a building only in part of wood; the school at Cervantes occupies a large recently completed wooden building; at Alilem the buildings are of light materials; and at Bontoc a boarding school building was erected in 1902, but lately had to be torn down owing to faulty construction. Its materials have been utilized in putting up a smaller building which accommodates the school for little girls, and 130,000 bricks have been made under the direction of the supervising teacher for the erection of a new school building. At Banaue two temporary buildings have been constructed, one neat building of wood erected, the walls of a dormitory building are up, and the concrete foundations laid for a large general school building. At Quiangan 30,000 bricks have been burned for a building there.

These boarding schools have not been an unqualified success. The Igorots dislike to have their children go away from home. The boys prefer the free life of the village to the discipline of the school, and frequently play truant and run away. One of the schools, that at Cervantes, is unfortunately located. It was placed here because this town had been selected as the provincial capital. It is, however, entirely removed from any large Igorot center, and the whole locality has proved to be unhealthy. This school will have to be removed or discontinued. To these should be added the training school for Tinguian boys at Lagangilang, Abra, which has several serviceable buildings completed in part

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of light materials. My own opinion of industrial boarding schools for these people is that while they are apparently necessary in order to train boys from villages where it would not be possible to send a teacher, they are not ideal educational institutions. If carried too far and made too large they are likely to show all the objectionable features of Indian boarding schools in the United States. By removing the boy from his home they educate him in some degree away from his community, which also loses the benefit of the presence of the school. As fast as Igorot boys can be trained as teachers, village schools will be opened. This plan has already been carried out in some degree, utilizing in many cases the services of young Ilocano teachers. Eleven village schools were conducted last year in Benguet; in Amburayan, 5; and in Lepanto and Bontoc 13 more. In Ilocos Norte and Ilocos Sur schools of a similar character were conducted for the Igorot and Tinguian villages in those provinces. The best results obtained in any of these village schools are seen in the supervising district of Cabayan, the Agno Valley of Benguet Province. Seven of the teachers are young Igorot men. In all of these towns there are school gardens. Basket making is taught at Bocot, pottery making at Daclan, blacksmithing and carpentry at Cabayan. At Cabayn, Daclan, and Bocot cloth weaving is taught the girls. Fourteen of the looms were made by the Igorot people and are the property of the girls using them. Five good school buildings have been put up, all of them, with one exception, made of pine lumber, laboriously hewn out by Igorot axmen. These buildings were put up without cost to the government, except for the nails, paint, and glass. In the supervising district of Cayan, Bontoc, by using Igorot skilled craftsmen, instruction was given in iron forging, pottery making, and the casting of brass. Six new village schools have been opened in the district of Bontoc this year. The people have voluntarily built the schoolhouses. The work in Abra merits special mention. Here the Tinguian, while not differing ethnologically from the inhabitants of the higher mountains, stand in plane of culture midway between the Ilocano and the Igorot. They are peaceful, well disposed, and prosperous. They have shown themselves extremely eager for schools, and no less than 23 village schools were conducted last year in Abra among the Tinguian, with an attendance of 940 children.

While the Igorots generally wish schools for their boys, they show a good deal of opposition to allowing girls to attend. The little Igorot maid begins her work in the camote patch at a very early age, and her labor is valuable. With the idea of affording the girl the chance of training, and of introducing an industry, the product of which is highly prized, loom weaving of the Ilocano pattern was attempted in a small way at Bua, Benguet, about four years ago. The plan has succeeded, and now no less than 6 schools in Benguet are giving training in loom weaving to Igorot girls, who, in addition to the practice of this art, learn a great deal that is useful and valuable to them in the care of their persons and their homes. If her handiwork at the loom can be made more valuable than her service in the field, she may thus secure relief from a kind of labor that seems too burdensome for her sex and not for the best interests of the community.

Altogether school work among these interesting mountain peoples promises to succeed. The people recognize the desirability of it, at least, for certain classes of their young men. The Spanish Government administered local affairs among them through the employment of Ilocano secretaries or "director cillos." The Igorots are very anxious that members of their own race should fill these positions and thus free their communities from an official oversight which they do not consider desirable. There is a need in each district of a class of young men with schooling to be town officials, "camineros" or road overseers, officers in the constabulary, which is largely recruited from Igorots, storekeepers in the government exchanges, school teachers, etc. The whole future of this mountain race is fraught with great interest. Under peaceful conditions, with their splendid strength, their habits of industry, their conspicuous honesty and reliability, they ought to develop into one of the most prosperous and pleasing mountain populations in the world.

AMERICAN TEACHERS.

By Act No. 74 of the Philippine Commission provision was made for appointment of 1,000 American teachers. There were never, however, this number on duty at any one time, the highest number reached having been 928 in March, 1902. In 1905 the number allowed by law was reduced to 861; in 1906 it was further reduced to 800; in 1907 it was raised to 820; and at the present time it

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is fixed at 795. Owing to the conditions of the service, a certain number of teachers resign during the course of each school year, and these separations are most numerous at the conclusion of each school year in March, so that the beginning of each school year in June finds this bureau short of a considerable number of teachers. On June 30 last there were in the bureau under regular appointment 722 American teachers, of whom 535 were men and 187 women. Of these, all but 85 have civil-service examination status.

As regards their scholastic attainments, of the total of 722, 253 are college graduates, representing 130 colleges and universities; of these institutions the University of California graduated 12; the University of Michigan, 10; the Universities of Indiana and Chicago, 9 each; the Universities of Kansas and Iowa, 7 each; Harvard, Cornell, and Stanford, 5 each; Yale, Boston, State College of Kentucky, and Nebraska, 4 each; the Universities of Missouri, Ohio, Illinois, Drake, Purdue, Colby, Dartmouth, Georgetown, Lake Forest, St. Charles, Oliver, Asbury, Grove City, and Holy Cross, 3 each. There are 108 teachers who are graduates of normal schools. The educational attainments of the rest of the corps are various; many have completed a part of a college or normal course, and 9 have the degree of bachelor of laws.

Much has been said relative to the instability of the teaching service. The force does change considerably from year to year, but of regular teachers in service June 30 the service of 6 dates from 1900, of 133 from 1901, 35 from 1902, 52 from 1903, 138 from 1904, 56 from 1905, 90 from 1906, 118 from 1907, and 94 from 1908. From this it appears that 364, or about 50 per cent, were appointed previous to 1905, while 139, or 19 per cent, were appointed previous to 1902, and have a period of service in most cases amounting to seven years. This table does not take account of the directors and superintendents, who were appointed to the teaching service as follows: In 1900, 2; in 1901, 34; in 1902, 3; in 1904, 1; total, 40. I think these figures demonstrate a greater stability of the teaching force than is ordinarily supposed. Certainly few branches of the Philippine service can show a directive staff so generally composed of men whose entrance into the service was contemporaneous with the organization of civil government. It is also encouraging to be able to state that there is a growing desire on the part of teachers formerly in the service to return after one or two years of absence in America. These teachers are especially desirable because of their previous experience. There were 28 reinstatements of this sort made during the school year ending June 30, 1908, as against 11 reinstated in the previous year.

During the past year the bureau lost 132 teachers. Of this number 113 resigned, 3 were dismissed for the good of the service, and 16 were transferred to other bureaus of the government; among these, 2 went to the bureau of agriculture, 2 to the bureau of audits, 2 were appointed deputy provincial treasurers, and 1 became chief clerk in a provincial treasurer's office, 1 was appointed treasurer of the non-Christian province of Agusan, 1 was appointed lieutenant-governor of the subprovince of Amburayan, and 1 assistant to the governor of Agusan.

It is with regret that the loss by death of 6 American teachers during the past year is reported:

Mrs. Ella J. Redford died in Manila of heart disease on October 20, 1907.

On November 12, 1907, Mr. Arthur G. Crane died at Manila of amoebic dysentery.

On January 28, 1908, Miss Anna E. Hahn was murdered in her home at Batangas. This act was committed by 3 Filipinos and the object was robbery. The murderers were apprehended and convicted, 2 of them being sentenced to death and 1 to fourteen years' imprisonment.

On February 28, 1908, Mr. Emery C. Lowe died at Cebu of appendicitis.

On April 3 Mr. W. J. Duncan died at Tuguegarao, Cagayan, of intestinal obstruction.

Early in May, 1908, Mr. Tilden R. Wakeley was murdered by pagan hill people in the mountains of southern Negros. Mr. Wakeley was accompanying Mr. Everett, a forester, on an extensive exploration of this part of the island; they had with them two Filipino rangers and a Filipino servant; all of them were murdered at night while in camp. Their remains were recovered by Maj. George B. Ahern, director of forestry, and Lieutenant Ford, senior inspector of Oriental Negros, in command of a party of constabulary, and brought to Manila, where they have been interred.

To fill vacancies a large number of teachers are appointed each winter and spring from eligibles who have passed a civil service examination. Last year

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these appointments were made in the United States by the director of education while in that country on leave. This year similar action has been taken by Mr. Frank R. White, second assistant director of education, likewise on leave in America. Since April 1, 114 new teachers have arrived. Thirty more are en route. The most important work done by teachers is as district supervisors. A district usually embraces a number of pueblos and the schools are often widely scattered as well as numerous. The work then is a severe test of physical endurance and hardihood, especially in the typhoon season. Last year the number of supervising districts was too few, the districts in many cases too large, and the duties thus imposed too onerous. During the division superintendents' convention at Baguio a thorough canvass of the field was made with the view of increasing the number and diminishing the size of districts. This has resulted in the establishment for the ensuing year of 460 supervising districts, of which 370 are to be filled by American teachers, 20 of whom supervise an additional district, and 70 by Filipino insular teachers who are appointed to be supervising teachers, "acting supervising teachers" or "assistant supervising teachers." For the provincial high schools 280 American teachers are necessary, for intermediate schools 80, and for schools in the city of Manila 95. This makes a total of 825 teachers requisite for school work as at present organized. To cover the number of positions between the number fixed by appropriation, 795, and that required, authority is given by legislation for the engagement of temporary teachers who have no civil-service status and who are paid only for the actual period of teaching.

Much difficulty has been experienced since the organization of the service in retaining teachers because of the inadequacy of compensation compared with clerical or skilled positions for which, in a great number of cases, teachers are qualified. As long as so large a number of Americans have to be brought from the United States the service will be expensive, but the advantages of high-grade men and women have been abundantly demonstrated. Great pains are taken in their selection to exclude all but teachers of high standard. They must be under 40 years of age, robust, without physical weakness or disability; of good character and blameless life; and they must pass a civil-service examination which is a test of their literary qualifications. Such teachers are usually appointed at an entrance salary of ₱2,400, though at times the salary schedule compels offering only ₱2,000. For the first six months of service a teacher is on probation. If he proves to be uncultivated and boorish in manner, slovenly in dress, a shirker or timeserver or a carper, inaccurate in his language and work, or lacking in the requisite moral qualities of courage, patience, honesty, and self-control, then he is not fitted for the service and is not up to the standard set by the great majority of his fellows. Satisfactory service with the Philippine government usually brings comparatively frequent promotion. In the teaching service these promotions are usually made on the recommendation of the division superintendents. As the salary schedule now stands, there are 52 at ₱2,000 and 290 at ₱2,400, the usual entrance salaries for properly qualified teachers. There are 140 positions at ₱2,600, 150 at ₱2,800, 100 at ₱3,000, 50 at ₱3,200, 12 at ₱3,600, and 1 at ₱4,000. For the guidance of superintendents in making their recommendations the following policy was recently announced: That markedly good men should be recommended for promotion to ₱2,600 after a full year of service, and at the end of 2 years to ₱2,800, although the limited number of positions does not always permit the recognition of meritorious service as promptly as it should be given. Principals of high schools with all the essential qualifications of training, fitness, and experience in the service should have ₱3,000, and in a few exceptional schools even more. A few teachers in high schools who have had special training as specialists to teach literature, languages, history, and science should, after several years of teaching, receive as much as ₱3,000; other high school teachers should receive less. The remainder of the higher positions at ₱3,000 and ₱3,200 should be filled by supervising teachers whose service has been long, arduous, and especially meritorious.

FILIPINO TEACHERS.

A limited number of Filipino teachers are insular teachers, appointed by the director of education as a result of civil-service examination, with temporary insular teachers appointed in the absence of regularly qualified appointees. Municipal teachers are appointed by division superintendents under regulations prescribed by the director of education, and are paid from municipal school

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funds. The former class was created to render assistance to certain municipalities whose school funds were lacking, and also to make the teaching service more attractive by providing a limited number of positions superior in remuneration and tenure to those of the municipal service. On June 30 there were 282 under regular appointment. The mean salary for these positions is about ₱600 annually; there were 83 drawing less than this figure and 113 drawing more. There were also 339 under temporary insular appointment. Of municipal teachers there were last year 6,211 engaged, of whom 4,212 were men and 1,999 women. Filipino teachers have been segregated into two classes, regular and temporary; the regular are those who have passed an examination prescribed by the superintendent of the division and whose academic attainments in school efficiency are of recognized grade; temporary teachers are those who have not these qualifications and who receive not an annual salary but a monthly wage for the actual time in which they are engaged in giving instruction. The average salary for the entire archipelago is ₱18.39 per month for men and ₱18.70 for women; for temporary teachers, ₱15.54 for men and ₱18.92 for women. In spite of the fact that the qualifications of teachers have risen steadily, this is actually a less average salary than was paid in 1904, when the average salary of men teachers was ₱20.76 and of women teachers ₱20.99. This is a reduction of salary to an amount insufficient to maintain a family, and below the wage of manual labor in many parts of the archipelago. The highest compensation paid in any division last year was in Manila, where the men were paid ₱72 per month and women ₱67. The next is Bulacan, with ₱25.25 for the men and ₱25.65 for the women. In addition to Manila and Bulacan 9 provinces paid an aevrage salary to both sexes of ₱20 or a little better. In 2 provinces—Bohol and Ilocos Norte—the average compensation for both sexes fell a little below ₱10. The fact that on an average and quite generally women teachers receive a little more than men teachers speaks well for the character of their service. It is, however, in large part attributable to the fact that barrio school positions are filled by very young men, students just out of intermediate or high schools, who are induced to begin their service at a low rate of compensation. It would not be possible to secure teachers for the service were it not for the fact that they receive a training and education in general school subjects during their period of teaching, but after this training is secured and the teachers become really valuable they leave the service that promises so little. The time has come when the salary of municipal teachers will have to be paid on a satisfactory business basis. An average compensation of at least ₱30 per month will be necessary. The attainments of these teachers are steadily rising. When it is considered that the great majority have received their entire academic instruction, as well as their professional training, since the American occupation, it is an important achievement to have produced over 6,000 teachers able to give primary and in some cases intermediate instruction in the English language. These are graded for academic attainments in the same manner as school children, and carry on studies that are primary, intermediate, or secondary. From time to time they are required to pass examinations, as a result of which, and of their regular work, they are advanced in grade. Out of the total of 6,786 reported on (including 575 insular teachers) 5,041 are classified as intermediate teachers. The class of teachers who have not yet completed the primary course is disappearing. While still found in a few provinces, it is probable that during the present year teachers with such slight attainments will be entirely dispensed with or graduated out of the primary studies, with the exception of certain teachers of arts and handicrafts, who are engaged, not for their book knowledge, but for their manual skill. Those in the intermediate course were classified last year as follows: Grade V, 1881; Grade VI, 1825, and Grade VII, 1335. There are 709 teachers pursuing secondary studies who are classified: First year, 619; second, 41; third, 38, and fourth year, 11. For the purpose of this examination of their attainments, insular teachers have been included with municipal teachers. These perform services as class-room instructors, as principals of intermediate schools, and as supervising teachers. In the last-named positions executive ability, fidelity to duty, and influence with the people of the community are requisite. How well Filipino teachers are suited by character and present attainments to fulfill this duty is an interesting and important question. As above stated, 70 are either serving as supervising teachers, assistant supervising teachers, or acting supervising teachers. It seems to be pretty thoroughly demonstrated that certain Filipino teachers are able to do this work as well as any man can. The province of Albay reports 1 Filipino supervising teacher equal to any; Antique especially recommends the work of 2; Batangas reports

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3 men of energy, force, and reliability, and Misamis at least 1. Filipino supervising teachers are found in 30 out of 38 school divisions, and in no case have these men been assigned to these positions without the approval of the division superintendent, which argues that their capacity is believed in and trusted to the extent of a trial. The city superintendent of Manila, however, states in his report: "The development of the Filipino teacher continues as the most serious problem at present existing in the city schools. The earlier entertained hope of rapid and consistent development up to an effective independent working standard finds only slight justification in developments to date. The position of those who formerly believed that in the Philippines teachers could be developed more rapidly than in the United States has become untenable and a normal rate of development is at present considered a very satisfactory standard of performance. It is found that a large number of Filipino teachers perform certain of their class-room functions in a very satisfactory manner, a smaller number are fairly good general class-room instructors, working, however, within limits of certain grades, and a still smaller number, usually occupying principals' positions, possess some degree of administrative ability, always assuming, however, the existence of limitations which cause a halt before the point of independent operation is reached."

For the training of Filipino teachers, the daily or weekly training class conducted by the supervising teacher is still continued in a majority of provinces and towns. In some cases, owing to the size of districts or other disadvantages attendant upon this work, these training classes have been given up. In all provinces the annual normal institute is still adhered to. These are held at different times in different divisions, usually being set for the period of harvest when school attendance is low. There were 35 such institutes held last year with an average session of about five and a half weeks each. They were attended by 6,671 teachers and "aspirantes." In all of these institutes much emphasis was laid upon training in industrial arts and handicrafts. These institutes exert a very beneficial influence upon the teaching spirit, drawing together from different points the teaching force for a month of really hard and serious work, enlivened by concerts, receptions, dances, and excursions. The department of city schools of Manila, in place of an institute extending over a number of consecutive weeks, is able to give more extensive instruction by holding a daily teachers' school during most of the months of the school year. This school meets in afternoon session at the building of the Manila High School.

The vacation assembly, which on two previous years had been held in Manila for both American and Filipino teachers, was divided this year; that primarily for Filipino teachers was held in Manila at the Philippine Normal School and that for American teachers and such Filipino teachers as wished to attend was held at Baguio, Benguet. The sessions at the normal school in Manila convened Monday, April 20, and closed Friday, May 15. There were courses offered by 28 American and 20 Filipino teachers. Beside the ordinary academic branches, these courses included music, primary busy work, gardening and agriculture, hygiene and sanitation, civics and Philippine history, wood-working, drawing, silk culture, a course in the care and decoration of schoolhouses and grounds, and instruction in primary industrial work, consisting of weaving mats, baskets, fans, hats, weaving and spinning of cloth, dyeing and bleaching. Two excursions to outside provinces and numerous excursions about the city were made. The class in civics and Philippine history by special invitation, on two occasions, visited the Philippine Assembly and observed the work of that body. By arrangements with the Italian Opera Company about 300 teachers attended a special performance at the Grand Opera House. Two public addresses were given and on the closing session there was an address by Hon. Sergio Osmeña, speaker of the Assembly. A chorus of 80 teachers was organized. There were 612 teachers in attendance, of whom 396 were male and 216 female, 3 were American, 103 insular Filipino, and 506 municipal teachers. No teachers were admitted whose academic attainments ranked below Grade VI; 176 were of secondary grade, 18 graduates of the normal school, and 1 a government student returned from the United States. These teachers assembled from 33 different provinces, all school divisions being represented except Benguet, Oriental Negros, Nueva Vizcaya, Sorsogon, and Surigao. Pampanga furnished the largest number, 152; Rizal, 100; Bulacan, 73; Pangasinan and Cavite, each 41; Ilocos Sur, 32; Tarlac, 29; city of Manila, 23; Zambales, 16; Batangas, 15; Albay, 13; and the other provinces a few each.

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At the School of Arts and Trades all the trades departments were kept in operation and a large amount of school furniture and equipment, including all needed by the School of Commerce, was produced. Teachers desiring to fit themselves in industrial work entered these departments at their option and continued as long as their means and leisure permitted. By such courses as these great strides are made in the introduction of new subjects and new methods, and in awakening a spirit of professional interest in the teaching service.

THE BAGUIO TEACHERS' CAMP AND ASSEMBLY.

The decision to establish a teachers' vacation camp and to hold an assembly in the mountains of Baguio, Benguet, was due in large measure to the urgent invitation of the governor of the province. Approval for the plan was given January 18. The arrangements for camp were very complete; 120 tents were obtained by cable from military stores in the United States and 30 were manufactured in this city. Accommodations for 360 tenters were thus provided. The site is that chosen for the newly erected buildings of the Baguio Industrial School for Igorot Boys, and consists of a little valley and surrounding slopes and knolls, well timbered with pine. Several small glades contain springs and are grown up with myrtle, tree ferns, and the striking tropical vegetation of these altitudes. The altitude of the camp is about 4,750 feet above sea level; the air is usually cool through the day and at night it may be surprisingly cold. It offers a decided change to the heat of the lowlands and coastal plains, which is greatest at this season.

Tent floors were made by contract; water was piped from a spring about a half mile distant and a storage tank was built from which a distributing system carried water under pressure to nearly all parts of the grounds; a bath house with facilities for hot as well as shower baths was provided, and the sanitary arrangements were made as complete as possible. A considerable amount of labor was expended in clearing the site, in building a graded road through the property, and in laying out paths. It was necessary also to drain the meadow at the bottom of the valley. Four assembly tents were put up for kitchen, dining, and storage purposes, and 2 other tents with wood floors for class-room purposes. A nipa and swali building which had been used in Manila for the school exhibit at the Philippines Carnival was transported to Baguio, set up there, and used for assembly purposes, at a cost of about ₱200. It was named the "Ramada." Special rates for teachers and other employees of the bureau were obtained from the Manila and Dagupan Railway and the Jenkins' Transportation Company, which enabled the round trip from Manila to Baguio to be made at a cost of ₱28.25. A concession was given the Benguet Commercial Company to supply meals at the rate of ₱2.75 per day, or ₱75 per month. The camp was opened April 6 and closed May 30; it was attended by 217 adults and 24 children; the highest number in camp at any one time was 190. The Vacation Assembly opened on April 20 and closed May 15. Four lecturers were present from the United States: Prof. W. D. MacClintock and Prof. Frederick Starr, of the University of Chicago; Dr. Jesse D. Burks, principal of the Teachers' Training School, Albany, N. Y., and Prof. Guy H. Roberts, of the University of California. Through the generous cooperation of the above-named institutions, the services of these gentlemen were loaned to the bureau of education without other cost than their travel and maintenance expenses. The list of regular courses offered was as follows: By Professor MacClintock, "Shakespeare's greater plays," and "Literature in the elementary schools;" by Professor Starr, "General anthropology," and "General ethnology;" by Doctor Burks, "Genetic psychology," and "Present-day educational tendencies;" by Professor Roberts, "The Government of the United States," and "Contemporaneous problems in government;" by Doctor Bean, of the Philippine Medical School, "Heredity," and by Prof. Manuel Gaytero, of the bureau of education, three courses in Spanish. These courses were given in the forenoons, between the hours of 9 and 12. There were enrolled in these classes 279 individuals, and the lectures were taken advantage of by a considerable number of visitors of Baguio, who were not residents of the teachers' camp. By arrangements with the Constabulary Band, 12 morning concerts were given by that organization, and 1 concert by the Tenth Cavalry Band, through the courtesy of the commanding general of the Philippines. Other camp recreations included camp fires, dances, and a "kanyao" by the Bontoc Igorot laborers, ball games, a field day, and numerous horseback excursions, several of these extending over a number of days. There were

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16 public lectures given by the members of the faculty, a list of which is given below;[a] two lectures on experimental horticulture by Professor Petrelli, of the La Trinidad Experimental Station, a number of addresses at the Division Superintendents' Convention, including an opening address by the governor-general, an address by Hon. Dean C. Worcester, secretary of the interior, and addresses by the visiting professors on the opening day of the assembly; and, on the invitation of the teachers, addresses on two Sunday evenings by Bishop Charles H. Brent and Rev. Dr. J. B. Rodgers. Under the leadership of Professor Starr, an anthropological conference was held lasting 3 days, from Monday, May 11, to Wednesday, May 13. The object of this conference was to arouse teachers to pursue ethnological investigations and to contribute the results of their studies. On the first day the conference was addressed by Professor Star on the subject of "What can and should be done;" on the second Doctor Barrows gave "An outline of Philippine ethnology;" on the third a number of short papers were given: "The Ilongot," by Doctor Barrows; "The gong music of Mindanao," by Miss Elizabeth H. Metcalf; "Mendelian heredity and its relations to man," by Doctor Bean; "The dress of the Bagobo," by Miss Sarah S. Metcalf; "Some survivals of Malay customary law in the Philippines," by Judge Lobingier; "Ilocano superstitions and practices," by Herbert M. Damon, and "Bisayan proverbs," by Geo. T. Shoens.

Through the cooperation of the bureau of printing, a daily paper—The Teachers' Assembly Herald—was published 6 times a week during the assembly. Twenty-seven issues were gotten out, the final one containing important announcements relating to school work at the opening of the school year. This little periodical contained each day epitomes of the class-room instruction in the various courses and longer résumés of the public lectures given. It proved to be of very great assistance to the educational work, and as it was sent out to all teachers of the bureau, to government officials, and friends and educators in the United States, it is believed that it accomplished much in awakening interest in the assembly idea. Due to the high character of the instructors, the educational work of the assembly was admirable, equal in quality if not in scope to that given by any university summer school or "Chautauqua" in America. The opportunity for intellectual refreshment was eagerly embraced and the lectures were attended by practically all residents of the camp. The health and sanitation were excellent. The health officer of the province stated that in his opinion there was no case of preventable illness. There were several accidents, numerous cases of mountain diarrhea, but nothing to indicate the presence of infection. The life of the camp was most harmonious, and not a single instance of improper conduct or disagreement between occupants of the camp was reported to the Director. It is impossible to praise too highly the work of the property clerk and the employees of his division upon whom rested the arduous and important work of installing the camp and caring for its needs. In spite of the large amount of property handled and issued to the occupants of the camp, and the further fact of a typhoon which did considerable damage in the latter part of May, the actual loss of public property aggregated only ₱31.53.

The annual convention of the division superintendents was held during the week beginning Monday, May 4. The convention was attended by nearly all of the superintendents of the islands, and coming at this time, shortly before the opening of the school year, was found to be of especial value. Besides discussions of the school policy, it enabled the director and first assistant director to take up with superintendents the needs of their respective divisions and make provision for them. The result is that no previous school year has ever opened with the same amount of intelligent knowledge of the needs of each division.

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[a] April 21, Professor Starr, "The Congo Free State;" April 22, Professor MacClintock, Whitman's "Passage to India;" April 23, Professor Burks, "The George Junior Republic;" April 27, Professor Roberts, "The reform of the English House of Lords;" Doctor Whitford, of the bureau of forestry, "The forests of the Philippines;" April 28, Professor MacClintock, "The comic spirit and its levels of manifestation;" Doctor Whitford, "The forest products of the Philippines;" April 29, Professor Starr, "Mexico as a field for folklore study;" Doctor Whitford, "Forestry in the Philippines;" April 30, Professor Roberts, "The San Francisco graft exposure and good government movement;" May 4, Doctor Bean, "General principles of heredity;" Professor Starr, "The hairy ainu of Japan;" May 11, Professor MacClintock, Ibsen's "Reform in drama;" Doctor Burks, "The theory of evolution;" May 12, Doctor Bean, "Theories of development and heredity;" May 13, Doctor Bean, "Mendelian heredity;" and May 14, Professor MacClintock, Wordsworth's "Doctrine of joy."

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The actual cost of the camp and assembly was as follows: For permanent equipment, including tents, tent furniture and supplies, tent floors, plumbing materials, materials for bath houses, and all other unexpendable supplies, ₱37,886.95; for conducting the Assembly Herald, ₱1,225.68; for ambulance and team, ₱1,100.50; for transportation of supplies, ₱3,199.12; for travel expenses to and from United States and maintenance in the islands of the instructors, ₱2,827.42; travel and maintenance of office employees on duty in Baguio, ₱2,168,52; labor, ₱6,366.78, including the expense of clearing the grounds, building a graded road across the site, laying out paths, draining the valley, building a bath house, installing a water system, remodeling tent floors, reconstructing the "Ramada," sanitation and care of the camp; a total of ₱53,774.97 purchased out of this sum is property to the value of over ₱41,000 on hand for subsequent occasions. This property is stored in the "Ramada" in charge of a bonded custodian. The only unpaid charges known to exist are the charge for one roll of tarred paper and return travel expenses to the United States of one of the visiting professors.

The advantages to the teaching force of a summer assembly of this kind are believed to be inestimable. Such gatherings bring about a personal acquaintance between directors, superintendents, and teachers that dissipates the misunderstandings which arise through the peculiar organization of the service, they promote the professional feeling and loyalty to the service, and they greatly stimulate the intellectual interests of all who attend. The opportunity offered by such an annual gathering for conference on questions related to educational, political, and social endeavor is important. The continuance of this assembly annually for a number of years would probably result in its becoming one of the most important educational institutions in the islands. The practice of bringing instructors from abroad should be continued, and from time to time should include educators not only of the United States, but of the adjacent countries of Japan, China, Indo-China, and the Malay Peninsula. In this way the benefits of comparative study and conference may be had.

DIVISION SUPERINTENDENTS AND THEIR WORK.

Each division superintendent has his office in the capital town of the province which constitutes his division. By the provisions of Act No. 447, his office is to be supplied and furnished. In some cases this has been done very satisfactorily, while in others the equipment is notably deficient. It is desirable that division superintendents spend a large share of the time in visiting and inspecting schools. The work of each supervising teacher should be intimately known to the division superintendent, whose visits should extend to every school in his division, even the most remote. The selection and promotion of municipal teachers rests with him, and while he may properly be guided in this matter by the advice of supervising teachers the responsibility is his and he should have as close an acquaintance as possible with the character and service of municipal teachers. The division superintendent is clearly the important administrative officer of the bureau of education. He is in close touch with the people, and his knowledge of the province and its social problems is not surpassed by that of any other official. In many of the provinces the work of school inspection and visitation is arduous and, during the stormy season, perilous.

In view of the great importance of their field work, it is unfortunate that division superintendents are necessarily burdened with a really great amount of office work. In addition to the selection and appointment of municipal teachers, the division superintendent makes out the municipal school "presupuestos," or estimates, for submission to the municipal councils, and he must approve all expenditures from municipal school funds. In some of the larger provinces, with 40 or more municipalities, this in itself means the planning of the expenditure and the checking of disbursements to an amount of more than ₱100,000, which alone is a matter of no small responsibility. There is also the important work of school-building construction, for which funds have to be provided, land titles registered, and frequently the construction overseen. There is a constant responsibility in adjusting differences and misunderstandings, and in handling cases of discipline. If a teacher's life or health is threatened, the superintendent goes to his relief, and he has to accompany new teachers to their stations, install, instruct, and train them in their duties. The intermediate schools and the provincial high school are likewise subject to his immediate direction. The following reports have to be regularly

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prepared and submitted to the director of education: Each month, a general report of enrollment and attendance of all schools, a service report and an absence report of all American and insular teachers; each quarter, a character and efficiency report of all teachers, municipal included, and one of property consumed; each half year, an efficiency report on clerical force, and one of school examinations and promotions; each year, a report of school work done in the division, one of school finances, another on the number and condition of school buildings, inventory of books and supplies on hand, and on needs for ensuing school year, and another on school gardens. His correspondence is large and must be kept up not only with teachers but with provincial and municipal officials as well. He also audits and approves traveling-expense vouchers of supervising teachers and checks their monthly reports of travel before forwarding them to the central office. All applications for leave of teachers pass through his hands. He is, moreover, a bonded officer, and is responsible for all public property within his jurisdiction, including text-books and every sort of public-school supplies, which in some provinces amount in value to more than ₱100,000. Altogether his work is burdensome, and there is no division superintendent who does not regularly work many hours of the day in addition to the supposed hours of duty.

In the past clerical assistance for these offices has been limited. Frequently it has consisted of a single clerk, formerly an American, but now, in every case but one, a native of the islands. A careful supervision of the division superintendent's work convinces me that the smallest divisions should have at least 2 Filipino clerks, 1 to be a bonded property clerk; the larger divisions, 3 clerks; and at least 3 divisions, 4 clerks each. These clerks should all be Filipinos, who are proving themselves more and more competent to fill positions of responsibility and to master the details of office organization. The present supply of office help is not adequate and should be increased in the next appropriation to the standard above set.

Appointment to the position of superintendent is made only from those teachers who have passed the assistant examination, the highest class of examination in the Philippine civil service. Salaries of superintendents vary according to their length of service and the responsibility of their positions. The present provision is as follows: 2 positions at ₱6,000; 3 at ₱5,000; 2 at ₱4,800; 11 at ₱4,500; 6 at ₱4,000; 7 at ₱3,600; and 8 at ₱3,200. As stated elsewhere, 35 of the 39 men filling the above positions, including 2 acting superintendents, were appointed to the education service in 1900 or 1901, and in view of this long service, their exceptionally high character and ability, and the responsibility of their work, their salary schedule should be somewhat improved. There should be a small increase in the number of higher paid positions, and the 8 positions at ₱3,200 should be raised to ₱3,600.

OFFICE OF THE DIRECTOR.

The personnel of the office consists of the director, the first assistant director, and the second assistant director of education, and 18 American and 16 Filipino clerks. The division of administrative business between the director and his assistants is as follows: The director handles personally all confidential matters and all matters bearing upon discipline, appointments, promotions, courses of study, choice of school text-books, and general matters of school administration and school policy. The first assistant director handles matters pertaining to the acquisition of school lands and buildings, plans of buildings, and apportionment of building funds. The second assistant director handles all matters referring to the districting of divisions, assignments of teachers, requests for school supplies, and purchase of other materials and text-books. The plan is for the three directors to so arrange their duties that one may be absent in the field inspecting school work.

The office has the following divisions: Under the oversight of the second assistant director, the property division; under the oversight of the chief clerk, the accounting, the record, and the statistical divisions. The work of these divisions during the past year may be summarized as follows:

The accounting division has the responsibility for all disbursements of the bureau, prepares all pay rolls and salary vouchers, draws all warrants, audits all expense vouchers, and keeps the service reports of all employees and the books of the bureau. During the past year it handled 8,549 vouchers, about 7,000 of which required audit before being sent to the insular auditor. Of this number only three were corrected on account of disallowances by the

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insular auditor. The funds disbursed through this division in the last year aggregated ₱3,029,000. A ledger account is kept showing the expenditures for every sort of purpose, and a journal account distributing expenditures by provinces from which a ledger account is prepared and published in the annual report. The accounting division employs the services of 4 American and 8 Filipino clerks, including the chief of the division.

The record division receives, files, cross references, and prepares card indices of all correspondence passing through the office. During the last fiscal year, beginning September 9, from which time an accurate record was kept, 38,247 separate pieces of correspondence were so recorded. The division employs the services of 1 American clerk, the chief of the division, and 12 Filipino clerks and typists.

The statistical division collects and tabulates all statistical data contained on the record forms of the bureau and keeps check on the division superintendents to see that they submit these when due and as directed. It keeps the character and efficiency records of all teachers and those of their training, education, experience, and past history. It collects and tabulates all data on provincial and municipal receipts and expenditures and prepares statements showing by school divisions for what purpose all expenditures are made from insular appropriation. It tabulates and indexes the annual reports of division superintendents and performs a large variety of additional service bearing upon the necessary statistical work of the bureau. One clerk, an American, is the only regular employee in this division.

The property division, as now organized, has 4 American and 3 Filipino clerks. The aggregate amount of property received and issued to the various divisions yearly approximates the value of ₱400,000, while the property in use in the schools or offices of the divisions totals over ₱2,850,000. For this property the division superintendents are responsible, but the accountable officer is the director of education. In addition to office work a traveling inspector of property visits divisions and checks records and property in the field as the necessity arises. A large amount of stock has to be carried in the bodegas of the central office. The last inventory made December 31, 1907, showed property to the value of ₱283,003.74 and was the lowest ever made. A saving in the expenditures of this division has been accomplished, notwithstanding the fact that the regular property work has been augmented by the purchase and sale to municipalities of large numbers of industrial outfits, by the sale of schoolbooks and supplies, and by the recent change from the former property system to the new, which places all responsibility on the bureau of education for the proper accounting of school officers in charge of public civil property. This bureau is understood to be the first one to install the new property system without assistance from the insular auditor. This task was begun after the completion of the returns for the quarter ended December 31, 1907, or about January 20. The change of great importance in the property accounting is the fact that no more returns are rendered to the insular auditor and neither are the certificates and affidavits covering property lost, stolen, or consumed furnished that office, but the responsibility for relieving accountable officers for property of the bureau is centered in the director of education or his duly authorized bonded official. It is a duty of no small responsibility to pass upon and fix a satisfactory adjustment of such losses as take place from time to time in property charged against various officials throughout the archipelago. From the experience which we have now had with this system, I am of the opinion that it far surpasses the old one from the standpoints of record and simplicity, but requires much labor to make its advantages apparent. For convenience in making cash disbursements the property clerk was designated disbursing officer on December 1, 1907, and since that date has paid out ₱64,148.63.

The office work of the bureau is conducted in what is considered a reasonably satisfactory manner and with a maximum of economy. The director knows of no way in which any part of the force could be dispensed with or more economically used. There has been a constant aim to train Filipino clerks and to assign them to increasingly responsible positions with a consequent saving in the high salaries that must be paid to obtain good American clerical assistance. The process of substitution of Filipinos should go on as fast as is consonant with the efficiency of the office work but no faster. At certain times, particularly during the first and last months of the school year the work is too heavy for the office force. The need, however, is not so much for an increased number of employees as for better salaries for several members of the

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office whose duties are very responsible and who are not paid a compensation equal to that provided in other bureaus of the government where no greater service is demanded.

COMPARISON OF SALARIES PAID TO AMERICAN AND FILIPINO EMPLOYEES.

The office system of the Philippine government is largely an inheritance from the military government which preceded it. Its bureaucratic character and its large attention to office records and correspondence are a result of its antecedents. When the change took place in 1901, the civil bureaus, as they were organized, availed themselves of American clerks who had been trained under the military government. There was an almost complete absence of skilled Filipino clerical help. It was found necessary, in order to retain the services of these American clerks, to pay them wages much higher than would be necessary in similar pursuits in the United States. The minimum salary of a competent American clerk has been about ₱2,400, and frequent promotions up to ₱3,600 have been necessary in order to retain the best of such men in the service. This condition is due to the living expenses for Americans, which are somewhat high, but still more to the fact that all Americans are disposed to regard their service here as only temporary, offering no stable career and involving the sacrifice of prospects in the United States. The work of American clerks has been indispensable for the prosecution of the government business, and still is in a great degree, although continued advance has been made in the training of Filipino clerks and the induction of these into office positions vacated by the voluntary resignations of American employees. In the preparation of these Filipino clerks the bureau of education has rendered a distinct public service. The director of civil service in his Seventh Annual Report, page 8, states: "There has been a considerable increase in the number of Filipinos who entered and passed the second-grade examination in English, and a still greater increase in the number receiving appointment. The eligibles obtained as a result of this examination are trained principally in the public schools, have a good conversational knowledge of English, spell and read fairly well, and, as a rule, have a good knowledge of arithmetic and excel in penmanship. With careful supervision and training many of them in a few months develop into fair junior clerks and junior typewriters and some of them eventually do superior work. There is little doubt that the expenses of the government could be further reduced in some bureaus by employing more Filipinos to assist in carrying on the ordinary routine work."

As the substitution of Filipino clerks for American is made, a serious question arises as to what compensation they shall receive. I think Filipinos generally feel that when a Filipino is appointed to a position previously held by an American, the full amount of salary paid the latter should be given to him. This is to lose sight of the fact that the American is imported labor, serving under conditions that are temporary, and unwilling to serve except for a considerably higher salary than he would accept for equal service in the United States. As long ago as 1904 the writer took the position that while Filipinos, as rapidly as their qualifications allowed, should be appointed to positions held by American employees, they should not expect the abnormal compensation paid to American or other foreign labor. The principle was advanced that the proper compensation for a Filipino in the Philippine Islands should at least not be higher than that paid to an American for the same class of service in the United States. The principle has been consistently adhered to in the bureau of education for the past four years, although it has resulted in the loss by transfer of many of its best Filipino employees, both teachers and clerks. The time has arrived when an understanding must be reached between all branches of the service and be sanctioned by the supreme executive authority. The principle laid down by this bureau for its own guidance has received the official indorsement of the director of civil service, and it is believed to be sound and worthy of general adoption.

Much more, however, is involved than mere economy of administration. The unduly high salaries paid to Filipino clerks, surpassing the wages obtainable in almost any other kind of employment, have produced a very unfortunate effect upon Filipino youths. A student or graduate of the public schools has before him the careers of clerks who have been rapidly advanced—sometimes by several successive promotions within a year—to salaries of ₱2,400, ₱2,800, ₱3,200, and even ₱3,600. Inevitably the clerical occupation appeals to the student as that offering the largest opportunity and the greatest remuneration.

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It is idle to talk to boys about "the dignity of manual labor," the "advantage of pursuing trade courses," or of "engaging in agriculture," when they see youths of no greater academic training than their own obtaining such phenomenal rise in clerical positions under the Filipino government. The policy of unduly high pay for clerks pursued by many branches of the government has very seriously interfered with the efforts of the bureau of education to emphasize the value of industrial training and the dignity of such occupation.

SCHOOL BUILDINGS AND LANDS.

Under the Spanish Government, in pursuance of a plan for public instruction commenced about 1860, a primary school for boys and one for girls was authorized for each pueblo. Buildings in many cases were durably constructed of stone. They usually consisted of one or two large class rooms, with several small rooms for the accommodation of the family of the teacher. They fronted on the town plaza, and their capacity varied from 40 pupils to 200. Many of these buildings were destroyed during the insurrection and many others were occupied for military purposes, so that comparatively few were available when the public schools were reorganized in 1901. Practically all required extensive repairs—new roofs, new floors, and new doors and windows—before they could be reoccupied. In 1904, 534 of these buildings were in use in 374 municipalities; in 1905 the number in use had risen to 726; the present number probably is not in excess of this figure.

The primary school buildings put up under the American Government may be roughly classified into two sorts—those constructed of permanent materials, stone, concrete, or hard wood, with iron roofing, and those built of "light materials," usually a wooden frame, with roofing, sides, and partitions of "nipa" and "swali," the floors being either of wood or bamboo. The construction of buildings of permanent materials has been slow, but 25 or 30 having been erected in municipalities each year. Of light-material buildings 369 were completed and about 600 more undertaken in 1904. Most of these were in part erected through the distribution of rice purchased with Congressional relief funds and turned over to the bureau of education to be expended for schoolhouse construction. A large number of these buildings were destroyed in the disastrous typhoon of 1905, but the construction, commenced through the use of this rice, continued through the voluntary efforts of the people, so that the year 1905 saw a total of 1,697 buildings put up under the American Government, of which 46 were of "strong materials," 269 of "mixed materials," and 1,382 of "light materials." In the same year a campaign was commenced to secure satisfactory high school grounds and buildings, the matter receiving especial attention in the report of the general superintendent for 1904. This effort resulted in 19 buildings being erected in 1906 for provincial school use and the beginning of the construction of 17 more, and in the erection or reconstruction of 2 buildings for intermediate schools at Indang, Cavite, and Bacolor, Pampanga. At the close of the year 1906, 2,454 primary school buildings were owned by the municipalities, and of these 298 were constructed during that year.

The insular government has aided the provincial governments in the construction of high school buildings as follows: In 1904, by Act No. 1275, the sum of ₱350,000 was appropriated to be apportioned by the director of education, subject to the approval of the secretary of public instruction, "for the construction of school buildings for intermediate and high school instruction and for the teaching of the useful arts and trades and applied sciences;" by Act No. 1580, passed in 1906, the sum of ₱300,000 additional was appropriated to the bureau of public works for the construction of schoolhouses in the provinces, it being provided that a sum not to exceed ₱50,000 thereof might be expended in the construction of an intermediate school in Manila; and by Act No. 1688, passed in 1907, ₱350,000 more were appropriated by the insular government for schoolhouse construction, making a total of ₱1,000,000. The apportionment of this money has resulted in ₱945,295.70 more being provided or promised from local sources, a total of ₱1,945,295.70. This sum of money has been set aside for the construction of 33 central high school, 36 intermediate school, 28 arts and trades, 4 agricultural, 6 domestic science, and 1 group of industrial school buildings for Igorot boys, 5 dormitories, and 1 school of fisheries building. Of these buildings 38 are constructed, 20 are now in course of construction, and 56 have not yet been commenced, the amount of local aid required

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not yet having been fully provided. The situation of high school plants at the present time is about as follows:

Albay has a new high school building completed, has plans for the construction of a shop building well under way, and has the construction of a dormitory under consideration.

Antique has a high school building completed, and plants for the construction of a shop building well under way.

Bataan has a school building completed, in one part of which instruction in woodworking is given.

Batangas has a high school building completed, a shop building in course of construction, and is planning to construct immediately an agricultural school building.

Bohol has both a high school building and a shop building completed.

Bulacan has a high school building completed and a shop building in course of construction.

Cagayan has a high school building completed and a shop building in course of construction.

Camarines has plans well under way for the construction of both a high school building and a shop building.

Capiz has a high school building completed and a shop building in course of construction.

Cavite has both a high school building and a shop building completed.

Cebu has both a high school building and a shop building in course of construction.

Ilocos Norte has both a high school building and a shop building in course of construction.

Ilocos Sur has two high school buildings, one at Bigan and one at Bangued, and a shop building at Bigan, completed.

Iloilo has both a high school building and a shop building completed, and has under consideration the construction of a large dormitory.

Isabela has a high school building completed, and the construction of a shop building is under consideration.

Laguna has the construction of a high school building under consideration and a shop building in course of construction.

Leyte has both a high school building and a shop building in course of construction. It also has under consideration a building for the teaching of domestic science and a large dormitory.

Mindoro has completed a high school building, a shop building, and a school dormitory.

Occidental Negros has completed a high school building, a shop building, and has under consideration the construction of an agricultural building, and a large dormitory.

Oriental Negros has a high school building completed and plans well under way for the construction of a shop building.

Nueva Ecija has a high school building completed, a shop building finished, and an agricultural school building in project.

Nueva Vizcaya has a high school building in course of construction.

Palawan has a high school building completed and a domestic science building in course of construction.

Pampanga has both a high school building and a shop building completed, one domestic science building in course of construction and another in project.

Pangasinan has under consideration, with the plans therefor well matured, the construction of a high school building and a shop building.

Rizal has completed a high school building, in the basement of which instruction in woodworking is given.

Romblon has completed a high school building and a domestic science building.

Samar has under consideration the construction of a high school building, and has plans well under way for the construction of a shop building.

Sorsogon has a high school building in course of construction, and plans well under way for the high school building at Masbate.

Surigao has completed both a high school building and a shop building. It has now in course of construction a building for the teaching of domestic science and has under consideration the construction of a large dormitory.

Tarlac has a high school building completed, and has plans well under way for the construction of a shop building.

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Tayabas has a high school building completed, and has plans under way for the construction of a shop building.

Union has both a high school building and a shop building completed.

Zambales has a high school building in course of construction.

In all the above cases where buildings have been constructed for school purposes, or are in course of construction, the sites upon which they are located belong to the provinces.

Construction work, which is always a slow process, is in these islands greatly retarded by the difficulty experienced in securing sites with registered titles. A long wait for a surveyor to survey the site and provide the requisite technical description thereof, is the common and not the exceptional experience. Even after the necessary papers have been prepared and application for registration has been made, a wait of months for the hearing in the court of land registration is usual. No other one thing has delayed and is delaying schoolhouse construction so much as the securing of satisfactory title to school-building sites.

Great delay has likewise been frequently experienced in the securing of plans from the office of the consulting architect, thus causing the people to become exceedingly impatient, and frequently prejudicing, to a considerable extent, the interests concerned. The making of such provision for additional help in the architect's office as will make possible the furnishing of plans with reasonable promptness will greatly facilitate construction work for this bureau.

Our present situation regarding intermediate school buildings is as follows: We have 198 such schools, including 40 which are preparatory departments to the provincial high schools. The preparatory departments share the buildings of the high schools. Intermediate school buildings have been constructed at Lipa, Batangas; Indang, Cavite; Batac, Ilocos Norte; Iloilo, Iloilo; Cervantes, Lepanto-Bontoc; Cuyapo, Nueva Ecija; Bacolor, Pampanga; Arayat, Pampanga; and Malabon, Rizal. All other intermediate schools are conducted either in rented buildings or in a part of the municipal school buildings set aside for that purpose.

Of municipal school buildings in addition to those of Spanish construction, a certain number of good central municipal schools have been erected. Among the best of these are the municipal schools at Pasig, Rizal; Mauban, Tayabas, Bacon, Sorsogon; San Fernando, Pampanga; Dagupan, Pangasinan; Tanawan, Leyte; Morong, Rizal; and Tuguegrao, Cagayan.

Few provinces have any considerable number of barrio school buildings of durable materials or of model construction. Ilocos Norte is perhaps an exception. Its division superintendent reports that every school is well housed. Many of these schools are built of hard woods and are admirable. They were constructed very largely through the voluntary efforts of the people of the barrios, the local school revenues not admitting of such expenditures.

Since 1906 all schoolhouse construction built in whole or in part out of insular funds is placed under the bureau of public works, to be carried out in accordance with plans drawn by the consulting architect to the Commission. While this arrangement assures a better type of building and construction, the varied interests and large amount of business resting upon both the above offices occasion delays and frequently insufficient attention to the details of both plans and construction, especially in the matter of needful variation from type plans. In view of the great amount of schoolhouse construction that ought to be attended to within the next few years, the present arrangement can not be considered a satisfactory one, and can only be made so by the establishment in the offices of the consulting architect and director of public works of special divisions to devote their atttention exclusively to school buildings.

THE AMERICAN CIRCULATING LIBRARY.

The past year has been the eighth since the organization of this library, and the librarian reports the year to have been the most successful in its history, showing a greater circulation of books and a larger number of readers. A total of 5,672 membership cards were issued, of which 185 were yearly, 2,900 extra, and 2,587 monthly, with 51 duplicates. The total receipts from subscriptions, fines, lost books, and extra book cards for the fiscal year ended June 30, 1908, were ₱3,358.78, as against ₱2,588.68 for the fiscal year 1907. As the personnel and current expenditures are paid by appropriation all amounts received from memberships are devoted net to the purchase of new volumes

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and magazines. There were added by purchase during the last year 452 volumes and 227 were received as gifts. There are 15,389 volumes on the stacks of the library and 9,093 in the storeroom. The total circulation of books for the year was 22,227. There are also 10 traveling libraries, which are sent to the troops and garrisons outside of Manila and which contain 450 volumes. During the year the librarian has addressed and sent out 15,760 newspapers to American troops, scouts, and constabulary. These were contributed by friends in the United States. Boxes of reading matter are also placed on each transport going to the United States for the use of soldiers on the long voyage. The number of daily readers or visitors to the library averages 130, two-thirds of whom are Filipinos. The periodical room has been much enlarged and its files of periodicals increased. It now includes not only American and English periodicals and journals, but a few of the best in Spanish, French, and German. The library seems to fill a very useful place in the educational and intellectual life of the community, and promises to gain in general usefulness with each succeeding year.

As an adjunct of the American library a collection of Philippiniana was commenced some years ago. This collection is cared for in a room by itself and has a special curator. Some additions of rare books have been made during the last year. The need of an adequate library of works bearing on the Philippines has been long apparent. In 1887 the Spanish Government, by royal decree, established in Manila the "Museo Bibleoteca de Filipinas," by which there was formed a small collection of works, less than a hundred of them, bearing upon the Philippines. At the time of the American occupation this institution was housed in a building on Calle Gunao. The library suffered much, but a considerable portion was recovered in 1900 by the bureau of education and at present it is in its custody. The government has now taken action by a bill passed in the last Legislature providing for the establishment of a public library of Philippine works and documents. The law provides for the appointment of a committee whose duty it shall be to bring together all books, letters, and documents relative to the Philippines and its history, which may be in the possession of various bureaus of the government and provides a sum of money for further acquisitions. The opportunity still exists to establish here a notable library of Philippiniana, but the rapid rise in value of all such works is making the task more difficult and more expensive each year that it is neglected.

LEGISLATION.

From July 1 to October 16, 1907, the legislative power in the islands was vested exclusively in the Philippine Commission. Subsequent to the latter date, the legislative authority has been vested in the Philippine Legislature, composed of the Philippine Commission and the Philippine Assembly. Under the first legislative period of the year acts passed affecting schools were as follows:

By Act No. 1665 the province of Romblon was annexted to that of Capiz, except the island of Maestre de Campo, which was annexed to the province of Mindoro. This made advisable the abolition of the school division of Romblon and the union of its territory with the divisions of Capiz and Mindoro, respectively.

The appropriation bill for the year, Act No. 1679, was passed August 10. It provides a total of ₱3,510,000 for the bureau of education.

By Act No. 1688 the sum of ₱350,000 was appropriated for the construction of school buildings, including quarters for teachers in districts inhabited by non-Christian tribes, to be allotted by the secretary of public instruction. The Moro Province was excepted from the benefits of this act.

By Act No. 1695 the internal-revenue law of 1904 was amended so as to devote an additional 5 per cent of the internal revenue to the maintenance of free public primary schools in the municipalities, making a total of 10 per cent of these revenues devoted to education.

The revised civil-service law, Act No. 1698, contained numerous provisions affecting the service of teachers.

By Act No. 1706 making appropriation for the sundry expenses of the government of the city of Manila, ₱285,500 were appropriated for the department of city schools.

By Act No. 1727, making appropriation for certain public works in the city of Manila, ₱62,000 were provided for the construction of a public school building in the district of Tondo and for the purchase of a site.

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By Act No. 1774 the time in which returning government students may take the civil-service examination was extended two months.

By Act No. 1791 amendment was made to the provisions of the Municipal Code providing municipal scholarships.

By Act No. 1795 compensation not to exceed 30 cents an hour was authorized for payment of students in agricultural or industrial schools for work done outside of the school hours and not connected with the regular school work.

The sessions of the Philippine Legislature saw the passage of a number of acts of importance to education. During the inaugural, the first and the special sessions 75 acts were passed by the Legislature. Of these, beside the appropriation bill (Act No. 1873), 8 deal exclusively or mainly with public instruction.

Act No. 1801—the "Gabaldon Act"—appropriated ₱1,000,000 for the construction of barrio school buildings. Instructions for proceeding in order to benefit under this law were issued by the writer in Circular No. 40–A, and later Circular No. 43 on registration of school sites. The sum of ₱250,000 is available for distribution this calendar year. The preliminary steps necessary to safeguard the erection of these buildings have delayed action by municipalities, and up to date only 3 applications have been received and 2 favorably acted on, to wit: an allotment of ₱1,400 to Pulilan, Bulacan, for a two-room building to cost ₱2,100, and ₱2,000 to the barrio of San Joaquin, Arayat, Pampanga, for a building to cost ₱3,000. Plans for barrio schools of different costs and styles of construction have just been received from the consulting architect and are now being printed.

Act No. 1813 authorizes the governor-general to convey either for consideration or by gift to any province or municipality "any land belonging to the government of the Philippine Islands, together with the buildings and improvements thereon, on condition that the same shall be used only for public school purposes," with provision of reversion to the insular government in case of other use.

Act No. 1815 provides that loans or unexpended balances of loans to provinces or municipalities from the insular government may be canceled by the province or municipality setting aside from its general funds a sum not less than the total indebtedness canceled, to be expended in the construction of public schools, roads, bridges, or other public works, in the discretion of the provincial boards, subject to the approval of the governor-general. The act further provides that action to this end shall be taken within ninety days after its passage. Such action, if approved by the governor-general, shall not be altered or repealed.

On June 28 last letters were addressed by the acting director of education to division superintendents of all provinces which were known to be indebted to the insular government, and superintendents were advised to take the matter up with the provincial boards. So far as is known, 5 provinces—Batangas, Bataan, Nueva Ecija, Capiz, and Tarlac—took action benefiting school construction.

Act No. 1829 provides for giving in municipalities, and especially in the barrios, "popular civico-educational lectures" in any of the dialects of the locality. The act contains a considerable number of details and can not be briefly described. It will be made the subject of a special announcement of this office, in which a list of such lectures will be prescribed and instructions issued relative to the designation of teachers or citizens of the pueblos to give these lectures. Prepared articles to form the basis of such lectures in some cases will be issued by the bureau. These will be translated into the dialects for public delivery.

Act No. 1857, the teachers' scholarship act, authorizes the director of education, subject to conditions prescribed by the secretary of public instruction, to open courses for the superior instruction of municipal or insular teachers, who shall be appointed to scholarships not less in value than their salaries or a sum of ₱40 monthly, at their option. The appointment of these teachers shall be made by the division superintendents among those teachers, male or female, who possess the best qualifications to receive the superior instruction provided. Teachers so appointed must sign a contract to teach for a period equal to that enjoyed by them in study.

Act No. 1858 is an act amending the Municipal Code (Act No. 82), in section 40, subsection L, paragraph 2. The amendment provides that in addition to those who have satisfactorily completed the intermediate course of instruction and are not less than 17 nor more than 30 years of age, municipal or insular teachers of the municipality who have held office for two consecutive years,

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shall be eligible for appointment as special municipal students in the Philippine Normal School or in the Philippine School of Agriculture.

Act No. 1866, the "Boiles Act," appropriates ₱75,000 for the payment of salaries of teachers during the present school year "in barrio schools, which, on account of the precarious conditions of the municipalities to which they belong, it has not been possible to open, or are about to be closed for like reasons." The act limits the barrios which may enjoy this assistance to those which guarantee, by means of a certified report of the division superintendent, a daily average attendance of at least 60 students; and also the existence and maintenance of good highways or communication to facilitate the access of children to schools at all seasons of the year. Barrios within 2 kilometers of a public school, either central or barrio, shall have no right to the benefits of this act. The municipality shall make application for the salary of this barrio teacher, through the division superintendent, to the director of education, who shall make provision for the appointment, with the approval of the secretary of public instruction. The salary shall not be less than ₱10 nor more than ₱20 per month. If a barrio is not able to furnish a daily average attendance of 60 students, with the approval of the director of education, the division superintendent may unite two or more barrios for this purpose. This act recognizes the fact that the financial provision of primary schools is inadequate, and it is hoped that it is a first step toward making a more suitable one.

The insufficient revenue for public primary schools is discussed elsewhere in this report. Here it may be mentioned that two measures were advocated during the sessions of the legislature to meet the need at least in part. One was the Boiles bill, which provided originally for ₱400,000; and the second a provision for ₱500,000, included in the annual estimate for the bureau of education, to be apportioned to municipalities for primary school purposes on the basis of actual school attendance. Both of these measures were approved by the Philippine Assembly, but in the conference committee with the Philippine Commission, the amount appropriated by the Boiles bill was reduced to ₱75,000 and the entire amount of ₱500,000 for apportionment to municipalities was stricken out. The clause providing for the allotment of these funds by the director of education was left in the appropriation bill and is as follows: "For the aid of municipal schools other than those aided by the special fund for the non-Christians, to be allotted to the municipalities to the credit of their local school fund by the director of education, with the approval of the secretary of public instruction, upon the basis of the average daily attendance for the preceding year as shown by the records of the office of the director."

Act No. 1870—the university bill—provides that the governor-general may establish in the city of Manila, or at the point most convenient, the University of the Philippines. The government thereof is vested in the board of regents, composed of the secretary of public instruction, the director of education, the chairman of the committee of public instruction of the Philippine Assembly, the president of the university, and 5 additional members to be appointed by the governor-general, by and with the advice and consent of the Philippine Commission. The board of regents is empowered to establish the usual university colleges, one of which shall be the Philippine Medical School now entering upon its second year. The sum of ₱100,000 was appropriated to be expended at the discretion of the board of regents for the establishment of a college or colleges authorized by the act. While the University of the Philippines will be an educational institution separate from the bureau of education, governed by its own board of regents, its establishment is a matter of such great importance to all interested in education that it is mentioned here. It is believed that its organization will greatly stimulate and solidify the instruction of the public high schools. This present year there are over 100 students pursuing the fourth year of the high school course. Next year many of these students will desire to continue their studies for either a Bachelor of Arts or a professional degree.

Act No. 1873—the general appropriation bill—appropriated ₱3,300,000 for the general expenses of the bureau of education. It made a very few changes and increases over the provision previously made. The readjustment of salaries of American teachers, which had already been made by Executive order on the recommendation of the director of education, fixes the total number of these positions at 795. Sixty additional insular Filipino positions have been created, 10 at ₱840, 20 at ₱720, and 30 at ₱600.

Reviewing this legislation as a whole, it will be seen to be of great prospective benefit to the public schools. Distinct encouragement should be felt, moreover, in the friendly attitude and confidence expressed by the members of

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the Assembly for the work of public instruction. While the system of school finance, as above stated, is still far from adequate, from the legislative standpoint, the public school system is more nearly complete.

ADDITIONAL LEGISLATION NEEDED.

On two points, however, additional legislation is seriously needed. These two matters are an adequate financial system, especially for primary education, and a compulsory school law. The first matter will be taken up in the discussion of school finance, which is treated in the succeeding section of this report. Attention has already been called to the fact that the conditions of school attendance are not satisfactory nor are they just to the child. A deeply rooted expectation on the part of the common people, that a child should get his education in about a year, stands in the way of parents sacrificing the benefit of the child's services to keep him in school long enough to complete the primary course; yet this minimum of education it is the child's right to receive. The enactment of a compulsory school law is recommended. It may, if preferred, be a local option law authorizing municipalities to pass ordinances requiring the attendance upon school of all children not younger than 8 years nor older than 15 years who have not already completed the primary course of instruction, provided that there is a public school within a reasonable distance of their homes, and provided further, that the child is not a regular attendant upon a private school. A provision of this kind would not interfere with private schools, but as the instruction in the majority of these can be completed in from one to one and a half years, the child would be obliged to attend upon a public school after the completion of the private school, unless he had obtained a training equal to that of the primary course. The act should also authorize the appointment of special truant officers appointed by the division superintendent and payable out of municipal funds.

THE FINANCIAL SUPPORT OF SCHOOLS.

INSULAR APPROPRIATIONS.

Money provided for public instruction is of three sorts, insular, provincial, and municipal. An insular appropriation for the bureau of education pays the expenses of administration and supervision, the salaries of American and Filipino insular teachers, cost of text-books, school equipment, tools and machinery, expenses of schools for the education of non-Christian peoples, for the support of students in the United States, and other expenses. The amount appropriated for the bureau of education for the last fiscal year was ₱3,510,000; to this amount must be added ₱85,951.14, the unexpended cash balance remaining to the credit of the bureau at the close of the preceding fiscal year which was available for the payment of outstanding obligations chargeable to that year, and ₱33,598.42, received during the year from the sale of books and other school supplies, making a total of ₱3,629,449.56 available for expenditure. Expenditures have amounted to ₱3,402,119.59.[a] These expenses are distributed under the following items: Salaries regular American teachers, ₱1,652,793.14; American temporary teachers, ₱160,203.82; regular insular teachers, ₱162,366.86; temporary insular teachers, ₱103,781.02; division superintendents and their clerks, ₱176,331.63; miscellaneous salaries and wages, ₱37,060.35; total for salaries and wages, ₱2,292,536.82; traveling expenses of division superintendents, ₱28,978.58; of supervising teachers, ₱40,304.31; of other teachers, ₱15,017.85; travel of employees to and from the Philippines, ₱101,967.29; total of travel expenses, ₱186,268.03; schools for non-Christian peoples, ₱42,922.31; miscellaneous charges against school divisions, ₱98,971.79; expenses of general office, including salaries, wages, and travel expenses, ₱115,825.84; the American Circulating Library, ₱13,669.95; text-books, supplies, and industrial equipment, ₱651,924.85; total of all disbursements, ₱3,402,119.59.

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[a] These expenditures cover unpaid accounts of the preceding fiscal year, and for this reason will not agree with the auditor's figures, when they are published, as these are for the fiscal year solely and are compiled after all accounts are in and have been settled. A balance of ₱227,429.97 remained on hand on June 30 to meet outstanding obligations for the fiscal year 1908, including among other items, books, supplies, and school equipment purchased but not delivered prior to July 1, 1908.

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By the current appropriation bill, Act No. 1873, ₱3,300,000 are provided. This sum will probably be adequate for the expenses of the current year, but provision should be made in the future for a slight increase in the number of American teachers and a considerable increase of insular Filipino teachers, a few additional Filipino clerks for the offices of division superintendents, a sum for the conduct of night school classes, and, what will presently be more fully discussed, a sum to be distributed among municipalities on the basis of school attendance for the assistance of primary school revenues. The sums spent by the insular government for education in preceding fiscal years have been as follows: In the fiscal year 1907, ₱3,112,540.24; 1906, ₱2,880,047.68; 1905, ₱2,402,733.46; 1904, ₱2,488,192; 1903, ₱2,801,126; 1902, ₱2,388,762; and 1901, ₱466,822.

PROVINCIAL SCHOOL FUNDS.

The second class of school revenues are funds appropriated or otherwise secured by the provincial governments. These are used mainly for the construction, rental, and care of provincial school buildings. Salaries of instructors in these institutions and school supplies are at present provided by the bureau of education in pursuance of a policy adopted in 1904. During the last fiscal year, provincial school funds aggregating ₱377,729.86, of which ₱189,854.87 were appropriations from general provincial funds, ₱67,331.68 was aid given by the insular government, ₱5,085.35 were voluntary contributions, ₱3,314.29 were receipts from other sources, and ₱112,143.67 was a balance from the fiscal year 1907.

The province which led all others in provision for secondary school funds was Pampanga, which from several sources had a total of ₱67,703.11. The next was Leyte, with ₱45,459.95, and then Cebu, with ₱40,226.25. The above total of provincial school funds is a larger sum than has been available in any previous year; in 1907 the amount was ₱307,780.86; in 1906, ₱225,159.44; and in 1905, ₱79,918.40.

The sum at present being devoted by provincial Governments to school purposes, however, appears to be less than 6 per cent of their income. Figures are not yet available for the fiscal year 1908, but for the fiscal year 1907 the ordinary revenues of all provinces excluding the Moro Province amounted to ₱1,986,040.97; miscellaneous receipts, derived in large part from the insular appropriations and including the payment in lieu of the land tax, suspended, ₱1,473,398.01; or a total revenue for the year of ₱3,459,438.98. Supposing the provincial income to be approximately the same figure for the last year, the sum of ₱189,854, or the amount appropriated for school purposes from provincial revenues, would be but 5.4 per cent of the total.[a] Moreover, the expenditure last year of ₱377,729.86 was induced and in part provided by the offer of insular funds apportioned by the secretary of public instruction in accordance with Acts Nos. 1580 and 1688, which apportionments in nearly every case were allotted on condition of a certain amount being provided locally. Without the inducement of such insular aid (and the funds provided by the insular government have now been entirely expended or allocated), so large an appropriation by the provincial governments can not hereafter be expected. Yet it is essential that a known and steadily growing income, even though small, be assured, not only for the conduct and equipment of provincial high schools, but for the development of the system of intermediate schools which are greatly needed, and at the present time are without definite sources of income.

For these reasons it is recommended that legislation be enacted reserving a certain proportion of provincial revenues for a special provincial fund for high and intermediate schools; appropriations for this fund to be made by provincial boards on the recommendation of the superintendents of schools. As stated above, this fund need not be greatly in excess of the total sum supplied

[a] The total provincial funds available for disbursement by provincial boards during the fiscal year 1907 was a much larger figure than the above, viz, ₱5,285,318.15 (exclusive of the government of the Moro Province), but this includes a large balance of ₱1,825,949.17 resulting from the fiscal year ended June 30, 1906.

These calculations are made from figures given in the report of the auditor for the Philippine Islands for the fiscal year ended June 30, 1907, Part II, pages 85 to 88; the figures for the Moro Province which have been deducted are found on pages 52 and 53.

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last year; but it should be certain, should exist in all provinces, and should be so laid as to gradually increase with the growth of revenues.

The plan recommended is the segregation of two-fifths of that portion of the cedula tax now accruing to provincial treasuries. The cedula tax in round figures amounts to ₱1,600,000, of which one-half goes to the municipalities and one-half to the provinces. Two-fifths of the latter sum would supply a fund of ₱320,000 annually, and it is believed could be segregated without embarrassment to the provincial governments. It would leave for other provincial purposes three-fifths of the cedula tax and all other revenues, including the large sums received from the provincial proportion of the land tax and the 10 per cent of the internal revenue collected by the insular government. The ₱320,000 falling to school funds would provide such a populous province as Cebu with about ₱20,000 annually, or Pangasinan with ₱$16,000; a typical province like Pampanga with ₱8,000; a small province like Bataan would not receive over ₱2,000 annually, but such a sum would after several years become adequate for the erection of a high or intermediate school building, and would enable the bureau of education to plan with certainty for the opening of such a school.

MUNICIPAL SCHOOL FINANCES.

Insular and provincial school revenues are, however, in a fairly satisfactory condition compared with the deplorable inadequacy of municipal school revenues. The Municipal Code (Act No. 82), enacted January 31, 1901, provided a municipal school fund for the conduct of primary instruction, to be raised by the collection of a land tax of one-fourth of 1 per cent upon all assessable property. It was further provided that the municipalities might increase this tax to one-half of 1 per cent and that they might, out of their general revenues, contribute by appropriation to school funds.

During the fiscal years of 1902 and 1903 school funds were badly administered, due largely to the demoralization that attended municipal government during these years of pestilence and disorder. In 1903 an arrangement which originated in Bulacan by an understanding between the provincial treasurer and the school superintendent, and gave the superintendent control over municipal school expenditures, was made generally effective throughout the archipelago. Under this arrangement municipal school finances were rapidly organized and put upon a satisfactory basis of expenditure. They have since that time been admirably handled. They have, however, been made very uncertain and subject to shrinkage by changes of legislation. For the fiscal year ended June 30, 1908, the amount of municipal school funds in Christian provinces was ₱1,797,547.67, of which the land tax yielded ₱960,269.65; appropriations made by municipal councils from their general funds, ₱451,438.79; loans from general fund, ₱15,106.58; from 5 per cent of the internal revenue, which first became available that year, ₱114,193.23; and from receipts from all other sources, including balance on hand July 1, 1904, ₱256,539.42. Considering the unsatisfactory condition of school funds in previous years, this was an encouraging showing. It appeared that school revenues might steadily improve and keep pace with growing needs. It is significant that in that year there were voluntary contributions to the value of ₱232,998.32, and that a large number of municipalities voted to increase the one-fourth of 1 per cent to three-eighths of one-half of 1 per cent and to devote the added tax to schools. But these encouraging prospects were frustrated by the suspension of the land tax for the fiscal year 1906. To take its place an insular appropriation was made, equal to the amount afforded by the land tax the previous year, but in 1907 the land tax was again suspended and only 50 per cent of the amount previously raised appropriated to municipalities from insular funds. This made the school year 1906–7 one of exceptional difficulty. In the previous year there had been expended for municipal school purposes the sum of ₱1,364,130.40, but the total expenditures for the fiscal year 1907, in spite of the growth of schools and the increased demand for instruction, had to be kept down to an actually less figure—₱1,359,702.05—and even to expend this sum it was necessary in a large number of cases to draw upon balances hoarded from previous years for permanent school construction. The last insular fiscal year has seen the land tax in part renewed upon the basis of a new and undoubtedly more equitable property assessment, but provincial boards have now authority to suspend its operation. Owing either to partial suspension, the new assessment, or unknown causes, the land tax has yielded for schools the past year only ₱460,257.02, or considerably less than half the amount it afforded in 1905. The balance of municipal school revenue has been furnished by the internal revenue, increased by 5 per cent by Act No. 1695.

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amounting to ₱499,578.11; appropriations by municipal councils out of general funds, ₱487,753.11, of which ₱285,500 was for the city of Manila, being the entire school revenue for that division; donations in money, ₱32,661.23; other sources of income, ₱35,722.53; making a total of ₱1,515,972. The balance on hand July 1, 1908, at the end of the first half of the municipal fiscal year, was ₱902,158.54. These figures do not include the province of Benguet, whose schools were supported wholly from insular funds.

During the past fiscal year expenditures for municipal schools, exclusive of Benguet, amounted to ₱1,447,261.42. Of this sum ₱1,124,568.51 were expended for teachers' salaries; ₱134,934.78 for repairs and construction of school buildings; ₱37,513.57 for school furniture; rents of school buildings and incidentals, ₱150,244.56, of which ₱63,784.51 were expended by the city of Manila, mainly for the rental of school buildings. There were outstanding indebtednesses not yet settled aggregating ₱60,780.38, and a balance on hand of ₱910,088.74. The largest balance was in the province of Pangasinan, whose towns had in their treasuries for school purposes at the end of the first half of the municipal fiscal year, $80,940.31; the next is Bulacan, ₱71,702.30; and then follows La Laguna with ₱68,395.65 and Sorsogon with ₱66,239.75.

There promises to be little satisfactory increase by natural development in these revenues, while it has been shown earlier in this report that, according to the careful estimates of division superintendents, to sustain a general system of primary instruction for all the Christian population of the islands, 5,000 primary schools and 8,200 teachers are needed, requiring an annual salary expenditure of at least ₱2,800,000, and a total annual municipal school expenditure for primary schools of at least ₱3,000,000. With this sum provided, the large and high purposes of giving the entire population a primary education, of dispelling illiteracy, of training a nation for social and industrial efficiency, can actually be realized within a few years. Compared with this need of a municipal school fiscal system, all other educational needs are secondary. The present municipal school revenue is barely more than half sufficient. Roughly speaking, its three present sources, land tax, internal revenue and appropriations from general municipal funds, can be depended on to yield only about ₱1,500,000. Where are the additional ₱1,500,000 to come from? By recent legislation ₱4,750,000 have been provided for rural roads and bridges during the present fiscal year; it ought to be possible to provide ₱3,000,000 annually for a system of primary instruction which is already thoroughly organized, able to economically apply every additional dollar provided, and thoroughly supported in all quarters by the Filipino peoples themselves. Consequently I offer no apologies for proposing the following financial plan for making municipal school funds what they should be. New taxes can scarcely be imposed on the people, but a fair proportion of recently laid taxes can and should be made available for school purposes. By Act No. 1652, enacted May 18, 1907, the provincial board of any province is empowered to provide for the collection of one additional peso cedula tax, for the "road and bridge fund." It is recommended that this additional tax wherever laid be divided equally with the municipal school fund. The levy of this tax makes unwise the imposition of any additional local tax, and the sum of ₱1,600,000, which it yields, is adequate local assistance both for the improvement of roads and for schools, if it is generally and regularly contributed, and finally, it will hereafter be found to be much easier to secure the general adoption of this tax if it is divided with schools. Legislation providing for this change should be so framed as to bring the next municipal fiscal year beginning January 1, 1909, within its provisions.

In addition to this new income, voted and raised locally, a nearly equal sum should be provided by the insular government and apportioned to municipalities on the basis of school attendance. If necessary, the appropriation for the bureau of education could be slightly reduced in certain particulars, so that the total insular appropriation for education would not exceed ₱4,000,000. Such a measure as this was advocated by the writer in submitting his last bureau estimate and met with the approval of the Philippine Assembly. A somewhat similar measure, which has been previously mentioned in this report, the "Bolles Act," passed the Commission as well as the Assembly, carrying ₱75,000 for the payment of barrio school teachers. These two plans should, by new legislation, be combined so as to provide the amount of insular aid indicated above.

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In support of this recommendation to aid local school funds there stands the decisive precedent of the public school system of the United States. In addition to the support of primary schools provided by local taxation under the American system, the state or commonwealth government almost invariably provides an additional sum out of state revenues distributed according to some equitable plan. In the State of California there is apportioned from the "state school fund" $250 for every teacher employed by cities and counties, and after this first apportionment is made, the balance of the state school fund is distributed in accordance with average daily attendance.

By the plan recommended above a satisfactory system of current municipal school revenues would be provided. Additional provision should be made at the same time for permanent school buildings. In this matter the insular government has done all it can be expected to do by the generous provision of the Gabaldon Act, whereby ₱1,000,000 will become available for barrio schoolhouse construction within the next four and a half years. What is now needed is legal authority for municipalities or minor divisions within municipalities forming "school districts," to provide the complementary local fund by self-imposed taxation. Such districts should be empowered to impose by a majority vote of adult inhabitants either a limited per capita tax or an additional land tax, not to exceed 1 per cent of assessed values, for the construction of new school buildings within the district. In making this recommendation we have again the precedent of the American system, which has had the test of a century of successful demonstration in both States and Territories. The American experience has been that self-imposed taxation sometimes by additional rates, sometimes by municipal bonds, for erecting schoolhouses has laid the foundation of public improvements of all kinds. By the practice of voting local taxes for schoolhouses, American communities, especially in the West, have been educated to the need of imposing taxes for general public improvements. It is believed that a similar education of public sentiment can take place in these islands if the beginning is made with schoolhouses.

SUMMARY OF COMPLETE FISCAL SYSTEM RECOMMENDED.

The complete fiscal system for education as herein recommended with the estimated revenues is summarized herewith:

Bureau of education, same appropriation as for the present year		₱3,300,000
Provincial school fund to be expended for high and intermediate schools, derived by setting aside one-half of provincial receipts from the cedula tax		320,000
Municipal school fund:		
Present revenue derived from land tax, internal revenue, and appropriations from general municipal funds	₱1,500,000	
Additional revenue to be derived from one-half of added cedula tax	800,000	
Apportionment from insular school fund distributed through the bureau of education	700,000	
		3,000,000
Total annual income, insular, provincial, and municipal		6,620,000
For permanent improvements during the next 5 years:		
Provided by the Gabaldon law (Act No. 1801)		1,000,000
To be provided by locally imposed taxes in school districts in amount equal to that required by the Gabaldon law		500,000
Total for permanent municipal school improvements		1,500,000

The above recommended school expenditure would represent about 21 per cent of the total governmental income.[a] Lest this amount of ₱6,620,000 be criticized as an undue proportion of government expense, attention is called to the fact that in the United States for the year 1905–6, "Of the total amount

[a] The report of the insular auditor for the fiscal year 1907 (Part I, p. 4) gives the income from taxation as ₱30,484,662.70, distributed as follows: Collections of the insular government, ₱22,013,257.81; provincial governments, ₱2,579,262.48; city of Manila, ₱1,802,281.05; and other municipal governments, ₱4,089,861.36.

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expended for all public purposes by the states, counties, cities, towns, etc., $740,000,000, over two-fifths (41.59 per cent) was paid for common schools." (Report of the commissioner of education for the year ending June 30, 1906, vol. 1, p. ix). This was a sum equal to more than one-half the cost of the National Government!

In America the necessity of supporting a system of common schools capable of giving elementary education to the entire population is thoroughly recognized. Here the necessity is no less urgent. The opportunity exists to enlighten the entire rising generation and to lay a foundation for a truly democratic society, but that opportunity is passing. A new generation, grown up since the beginning of American occupation, will soon reach adult life. It will feel the stir and progress of the present time; it will aspire to wider activity and to better rewards, but unless it is made literate it will remain impotent to realize its opportunities, the prey of commercial avarice, and the victim of misguided political leaders.

SCHOOLS IN THE MORO PROVINCE.

No part of this report has included the Moro Province which conducts education through its own department of schools, the superintendent being appointed by the governor of the province. The presence therein of different peoples antagonistic to one another in religion and culture makes the school problem there very difficult. While in the main the school system corresponds with that of the bureau of education, some differences have been developed, notably the teaching of reading and writing to Moros in their native dialects, written, as these dialects regularly are, in the Arabic character. Such are the "pandita schools," taught by Moro scholars, supported by the communities and supplied by the department of schools with books and other equipment. The superintendent reports that these schools promise to break down the hostility of the Moros to American schools, and by removing misconceptions may pave the way for schools more in accordance with public policy. Schools in pagan communities also promise well, especially in the district of Davao, where whole villages have moved down from the hills into proximity to the recently opened American plantations.

All schools are supported outright by provincial appropriations, the total cost for the last fiscal year being ₱81,192.50. A provincial high school was maintained at Zamboanga, and 57 primary schools with a total enrollment of 4,894 pupils, 3,264 being males and 1,648 females. These pupils were divided between 3,897 Christian Filipinos, 842 Moros, 130 pagan children, and 25 Americans. The average daily attendance was 2,829. The province provides for 19 American teachers, and in addition there were last May 74 native teachers, 51 being males and 23 females; 63 of them Christian Filipinos, 11 Moros, besides 4 Moro "panditas," who taught without pay from public funds. Two normal institutes were held for the instruction of these teachers and the provincial school at Zamboanga is growing into a center for the education of teachers for the schools of all parts of the province.

APPENDIX ON INDUSTRIAL TEACHING.

The place of native arts and industries in the primary course has received attention earlier in this report, as well as the special industrial training to be given to both boys and girls in the last year of the primary school, while the instruction given in agriculture, shop work, and domestic science and art in the intermediate schools has also been explained.

Because, however, of the interest that attaches to this branch of instruction and because of the exceptionally large place which is given it in Philippine schools, an appendix furnishing details of this work accompanies this report.[a]

RÉSUMÉ OF THE YEAR'S WORK.

In spite of the insufficient municipal school funds, the past year is believed to have been the most successful in the history of public instruction in these islands. Not only have more schools been conducted and more teachers been engaged, but the instruction given was superior to that of any previous year.

[a] This part of the appendix was not received in the Bureau of Insular Affairs, War Department.

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The enrollment of pupils, while not as large as in 1905, is fully as great as the number of teachers and accommodations permit. The figures for primary schools and primary attendance have been given earlier in the report. The total enrollment in all schools—secondary, intermediate, and primary—for the year was 486,676, and for the single month of March, the last of the school year, 374,600. To these figures may be added those of the Moro Province, which gives a total annual enrollment for the archipelago of 491,570 pupils.

There is a decided gain in the number of pupils in the higher grades of the primary course, as well as corresponding growth of numbers in the intermediate and secondary courses. This progress, which proves a growing readiness of primary pupils to continue in school after their first year or two of study, is indicated by a tabulated form [a] of promotions, which is an appendix of this report, and shows the following percentages in promotions of pupils from one grade to the next higher; of those in attendance in Grade I, 27 per cent; Grade II, 38 per cent; Grade III, 45 per cent, and Grade IV, or graduation from the primary school, 35 per cent. The continuance of attendance in intermediate and secondary schools has always been satisfactory.

Other school matters in which there has been notable progress during the last year are, the development of the courses of study, the three years of the former primary course becoming four, a change which has been fully accomplished and has been accompanied by more rigorous grading of pupils in all schools; the organization of a remarkable amount of new industrial work, embracing native arts, gardening, shop work, agriculture, domestic science, and art; the equipping with woodworking machinery of 11 new shops; the construction of 19 new buildings for high-school purposes; the successful inauguration of a nurses' training school; the opening of a school for deaf mutes; the opening of schools in new districts for non-Christian peoples, a step made possible by a special appropriation now available for this purpose; increased opportunities for the training of Filipino teachers, including a correspondence course opened by the Philippine Normal School; the Teachers' Camp and Vacation Assembly at Baguio, Benguet; the enactment of much beneficial legislation providing new resources for school work; and, finally, a deepening of interest in their work on the part of the teaching force. The American teaching force has become more stable, more deeply concerned with the task before it, and the character of the corps of Filipino teachers is still rising. Complaints within the service have been almost entirely absent, and there have been very few cases of discipline. A feeling of native opposition to the public schools apparent in certain quarters a year ago seems to have lessened, a result undoubtedly attributable to the zealous interest of members of the Philippine Assembly in promoting the cause of education during the recent sessions of the Legislature. From the administrative side the school work has been benefited by the system of preaudit of accounts, the new property system, the enlargement of the number of supervising districts, and the perfection of many details for the conduct of the business of the bureau.

There has never been a time when the public schools of the Philippines promised so much or appeared to fill so large a part in the progress of these peoples. If the work receives the support that it requires and if it is continued with the high aims that have heretofore actuated it, if there is no weakening of zeal nor loss of patience, a few years more of effort will demonstrate that the American faith in the power of public schools to affect the social and spiritual betterment of backward peoples is not an impractical delusion, but a vision of highest statesmanship.

DAVID P. BARROWS,
Director of Education.

The SECRETARY OF PUBLIC INSTRUCTION,
Manila, P. I.

The following tables have been omitted and filed in the Bureau of Insular Affairs, War Department:

Table III. A diagram showing, by months, the variation in the total monthly enrollment and average monthly attendance for the school years 1906–7 and 1907–8.

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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Table IV. A table showing, by divisions and islands, the monthly enrollment during school year 1907–8.

Table V. A table showing, by divisions and for the islands, the average daily attendance during school year 1907–8.

Table VI. Enrollment by grades at the close of the school year, March 27, 1908, by divisions and for the islands.

Table VII. Comparative percentage of attendance attained during school year 1907–8, by divisions and for the islands.

Table VIII. Promotions by grades during last semester of school year 1907–8, by divisions and for the islands.

Table IX. Enrollment by sexes in different courses of study during month of March, 1908.

Table X. Enrollment, attendance, percentage of attendance, and instructors (American and Filipino) in the normal institutes held during the school year 1907–8, by divisions and for the islands.

Table XI. Attainment and number of teachers enrolled in third annual vacation assembly for Filipino teachers, held at Manila, April 20 to May 16, 1908, by divisions.

Table XII. Summary of results of an examination for physical defects among school children of the city of Manila during 1908.

Table XIII. Average monthly salaries of Filipino teachers, by divisions and for the islands.

Table XIV. Apportionment of funds appropriated by Acts Nos. 1275, 1580, and 1688 for aid in construction of public-school buildings, and amounts to be raised locally for same purpose, by divisions and for the islands.

Table XV. Distribution of disbursement made from the insular appropriation during fiscal year 1907–8, by divisions and for the islands.

Table XV–A. Purpose for which the amount given in preceding table, as not charged to divisions, was expended.

Table XVI. Total provincial receipts and expenditures, by divisions, for school purposes during fiscal year 1907–8.

Table XVII. Total municipal receipts and expenditures for school purposes during fiscal year 1907–8.

Table XIX. Cost per pupil enrolled in the public schools and cost per capita of the total population for education during fiscal year 1907–8, by divisions and for the islands.

I. *A table showing, by years, the number of schools in operation and under the supervision of the bureau of education during the period from 1903 to 1908, inclusive.*

School year.	Primary.	Intermediate.	Secondary.	Total.
1903	[a] 2,000	.....	.....	2,000
1903–4	2,233	17	35	2,285
1904–5	2,727	102	35	2,864
1905–6	[b] 3,108	119	36	3,263
1906–7	3,435	216	36	3,687
1907–8	3,701	193	38	3,932

[a] Estimated.
[b] Exclusive of Moro Province, 58.

The arts and trades, normal, domestic science, agricultural, and special insular schools are included under the intermediate or secondary heading.

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II.—*A table showing, by divisions and for the islands, the number of schools, total annual enrollment, average monthly enrollment, average daily attendance, and percentage of attendance during the school year* 1907–8.

	Secondary.					Intermediate.				
	Number of schools.	Annual enrollment.	Average monthly enrollment.	Average monthly attendance.	Percentage of attendance.	Number of schools.	Annual enrollment.	Average monthly enrollment.	Average monthly attendance.	Percentage of attendance.
Manila	3	289	242	238	97	8	1,568	1,096	1,076	97
Albay	1	52	35	33	94	4	471	411	379	92
Camarines	1	10	9	9	100	7	382	329	306	93
Antique	1	28	22	21	95	2	182	145	127	87
Bataan						1	145	106	98	92
Batangas	1	63	53	48	91	13	819	701	628	90
Benguet										
Bohol	1	10	9	9	100	2	188	161	148	92
Bulacan	1	68	65	62	97	4	616	568	517	91
Cagayan	1	31	28	25	89	6	435	379	356	94
Capiz	1	29	24	23	96	2	312	259	243	93
Cavite	1	67	62	60	97	6	418	359	342	95
Cebu	1	39	31	30	97	5	672	490	433	88
Ilocos Norte	1	61	47	46	98	5	504	445	412	93
Ilocos Sur	2	85	70	68	97	9	917	781	723	93
Iloilo	1	84	72	66	95	13	1,386	1,059	975	92
Isabela	1	12	6	6	100	3	114	94	89	95
Laguna	1	16	14	13	93	9	640	540	479	89
Lepanto-Bontoc						3	60	21	21	100
Leyte	1	30	27	26	96	6	476	400	373	93
Mindoro						1	44	36	32	89
Misamis	1	6	5	5	100	3	157	99	75	76
Occidental Negros	1	45	41	39	95	10	538	424	377	89
Oriental Negros	1	10	8	8	100	1	144	125	114	91
Nueva Ecija	1	18	16	16	100	7	524	416	370	89
Nueva Vizcaya	1	6	6	6	100	1	72	61	55	90
Palawan						1	26	25	24	96
Pampanga	1	37	35	34	97	8	809	662	611	92
Pangasinan	1	42	25	23	92	6	708	650	612	94
Rizal	1	17	14	11	79	5	480	403	356	88
Romblon	1	19	16	15	94	1	95	83	73	88
Samar	1	20	19	17	89	6	488	420	392	93
Sorsogon	1	12	11	10	91	4	372	331	294	89
Surigao	1	12	10	10	100	5	185	173	136	79
Tarlac	1	15	14	14	100	9	686	525	477	91
Tayabas	1	67	58	56	97	10	816	673	611	91
Union	1	10	9	9	100	3	466	418	403	96
Zambales	1	29	27	27	100	2	245	217	208	96
Normal School	1	286	238	229	83	1	270	199	188	94
Trade School	1	18	16	15	94	1	350	248	217	87
Total	38	1,643	1,384	1,327	96	193	17,780	14,532	13,349	91

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II.—*A table showing, by divisions and for the islands, the number of schools, total annual enrollment, average monthly enrollment, average daily attendance, and percentage of attendance during the school year* 1907-8—Continued.

	Primary.					Grand total.				
	Number of schools.	Annual enrollment.	Average monthly enrollment.	Average monthly attendance.	Percentage of attendance.	Number of schools.	Annual enrollment.	Average monthly enrollment.	Average monthly attendance.	Percentage of attendance.
Manila	25	8,363	6,749	6,397	95	36	10,220	8,087	7,711	96
Albay	91	10,292	7,513	5,225	70	96	10,815	7,959	5,637	71
Camarines	96	9,312	6,086	4,432	73	104	9,704	6,424	4,747	74
Antique	62	9,294	6,756	5,612	83	65	9,504	6,923	5,760	83
Bataan	23	2,567	1,642	1,238	75	24	2,712	1,748	1,336	76
Batangas	130	12,079	7,998	6,295	78	144	12,961	8,752	6,971	80
Benguet	13	1,029	728	597	82	13	1,029	728	597	82
Bohol	145	20,542	14,451	10,869	75	148	20,740	14,621	11,026	75
Bulacan	112	9,475	8,376	6,314	75	117	10,159	9,009	6,893	77
Cagayan	86	9,111	6,192	5,291	85	93	9,577	6,599	5,672	86
Capiz	176	18,809	14,306	10,802	76	179	19,150	14,589	11,068	75
Cavite	59	10,406	7,538	6,055	80	66	10,891	7,959	6,457	81
Cebu	262	50,919	26,170	20,346	78	268	51,630	26,691	20,809	78
Ilocos Norte	126	15,392	12,013	9,324	78	132	15,957	12,505	9,782	78
Ilocos Sur	147	15,076	10,982	8,593	78	158	16,078	11,833	9,384	79
Iloilo	151	21,591	13,108	10,462	80	165	23,061	14,239	11,503	81
Isabela	62	4,061	3,361	2,670	79	66	4,187	3,461	2,765	80
Laguna	92	9,417	6,701	5,393	80	102	10,073	7,255	5,885	81
Lepanto-Bontoc	25	1,722	1,231	1,089	88	28	1,782	1,252	1,110	89
Leyte	145	21,151	14,232	11,264	79	152	21,657	14,659	11,663	80
Mindoro	42	3,532	2,225	1,710	77	43	3,576	2,261	1,742	77
Misamis	79	8,259	5,494	3,756	68	83	8,422	5,598	3,836	70
Occidental Negros	156	21,812	15,951	12,015	75	167	22,395	16,416	12,431	76
Oriental Negros	100	15,793	10,992	7,966	72	102	15,947	11,125	8,088	76
Nueva Ecija	105	11,730	8,644	6,337	73	113	12,272	9,076	6,723	75
Nueva Vizcaya	17	1,928	1,594	1,316	83	19	2,006	1,661	1,377	83
Palawan	20	2,567	1,753	1,457	83	21	2,593	1,778	1,481	83
Pampanga	151	15,936	9,361	7,554	81	160	16,782	10,058	8,199	82
Pangasinan	328	37,208	24,673	20,225	82	335	37,958	25,348	20,860	82
Rizal	84	9,100	6,122	4,879	80	90	9,597	6,539	5,246	80
Romblon	30	4,144	3,560	2,582	73	32	4,258	3,659	2,670	73
Samar	98	16,072	12,169	10,559	87	105	16,580	12,608	10,967	87
Sorsogon	91	9,741	7,202	5,493	76	96	10,125	7,544	5,797	77
Surigao	94	8,894	6,469	5,164	80	100	9,091	6,652	5,310	80
Tarlac	93	11,897	7,851	6,530	83	103	12,598	8,390	7,021	84
Tayabas	95	13,529	12,093	10,399	86	106	14,412	12,824	11,066	86
Union	52	10,510	7,814	7,117	91	56	10,986	8,241	7,529	91
Zambales	36	3,570	2,944	2,481	84	39	3,844	3,188	2,716	85
Normal School	1	253	198	182	92	3	809	635	599	94
Trade School	1	170	85	66	78	3	538	349	298	85
Total	3,701	467,253	323,327	256,056	79	3,932	486,676	339,243	270,732	80

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XVIII.—*Table consolidating the insular, provincial, and municipal expenditures for school purposes during the fiscal year 1907–8.*

Divisions.	Insular.	Provincial.	Municipal.	Grand total.
Manila	₱165,919.53	.....	₱264,227.07	₱430,146.60
Albay	58,756.36	₱1,371.57	53,051.75	113,179.68
Camarines	65,873.13	1,748.22	33,468.62	101,089.97
Antique	23,351.84	2,692.50	15,409.07	41,453.41
Bataan	26,962.34	542.12	9,408.70	36,913.16
Batangas	69,944.76	4,351.08	56,530.64	130,826.48
Benguet	30,846.25	.....	.....	30,846.25
Bohol	60,822.95	2,306.22	33,343.40	96,272.57
Bulacan	78,178.25	961.37	45,771.44	124,911.06
Cagayan	59,525.84	710.09	27,177.77	87,413.70
Capiz	73,948.46	1,438.71	30,658.20	106,045.37
Cavite	68,488.69	1,177.92	29,424.13	99,090.74
Cebu	110,348.27	3,401.90	83,053.70	196,803.87
Ilocos Norte	59,097.47	7,177.69	32,675.42	98,950.58
Ilocos Sur	105,500.47	6,040.46	39,278.29	150,819.22
Iloilo	102,225.49	9,034.52	62,428.02	173,688.03
Isabela	30,687.76	2,818.39	13,521.79	47,027.94
Laguna	67,026.61	6,906.15	50,158.64	124,091.40
Lepanto-Bontoc	29,853.56	7,123.69	3,515.59	40,492.84
Leyte	74,812.81	4,062.00	48,102.57	126,977.38
Mindoro	27,025.76	869.84	8,326.81	36,822.41
Misamis	49,480.59	1,132.16	19,511.42	70,124.17
Occidental Negros	78,779.66	29,930.08	53,028.15	161,737.89
Oriental Negros	48,295.01	1,234.90	24,876.93	74,406.84
Nueva Ecija	50,083.38	3,308.41	23,267.50	76,659.29
Nueva Vizcaya	35,423.91	549.90	4,390.21	40,364.02
Palawan	20,714.48	7,169.65	11,093.40	38,977.53
Pampanga	92,237.89	62,962.23	66,368.94	221,469.06
Pangasinan	123,116.68	4,935.26	97,647.16	225,699.10
Rizal	63,157.58	1,922.04	54,965.51	120,045.13
Romblon	24,391.58	1,225.05	6,355.53	31,972.16
Samar	65,357.61	1,194.01	21,692.03	88,243.65
Sorsogon	50,052.33	5,480.69	29,871.21	85,404.23
Surigao	58,864.22	895.46	17,438.78	77,198.46
Tarlac	52,744.94	1,459.04	34,509.84	88,713.82
Tayabas	81,445.69	13,374.11	68,352.58	163,172.38
Union	54,766.71	10,978.37	23,889.64	89,634.72
Zambales	35,835.06	4,570.00	11,251.35	51,656.41
Normal School	98,686.85	.....	.....	98,686.85
Trade School	63,916.64	.....	.....	63,916.64
Library	14,657.33	.....	.....	14,657.33
General Office	181,615.87	.....	.....	181,615.87
Miscellaneous	668,898.98	.....	.....	668,898.98
Total	3,402,119.59	216,955.80	1,508,041.80	5,127,117.19

NOTE.—The known and estimated outstanding obligations on June 30 payable from the insular appropriation is ₱96,491.49, making a possible total expenditure from the insular appropriation of ₱3,498,611.08.

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EXHIBIT B.

REPORT OF THE DEAN, PHILIPPINE MEDICAL SCHOOL.

DEPARTMENT OF PUBLIC INSTRUCTION,
PHILIPPINE MEDICAL SCHOOL,
Manila, October 2, 1908.

SIR: The following report gives a brief and condensed account of the work performed, changes in personnel, etc., in the Philippine Medical School during the fiscal year ended June 30, 1908:

TEACHING STAFF.

The teaching staff has been augmented by the addition of Dr. Robert Bennett Bean, assistant professor of anatomy, and Dr. Philip K. Gilman, assistant professor of pathology and bacteriology, both of whom after one year's service were promoted to the positions of associate professors in their respective departments, effective July 1, 1908. Dr. Philip E. Garrison, U. S. Navy, at present on detail in the biological laboratory, bureau of science, has been appointed associate professor of medical zoology; the position having been created by the board of control during the past year. During the first year of the organization of the faculty Doctor Garrison was assistant professor of tropical medicine. The chair of physiology has been filled by Dr. Hans Aron, who was formerly assistant in the Kgl. Thierärztliche Hochschule in Berlin. Doctor Aron at present fills the position of assistant professor, under contract for one year, but the conditions are such that if his services prove satisfactory his advancement will follow in the same degree as the promotions of Doctors Bean and Gilman. Dr. Vernon L. Andrews, of the biological laboratory, bureau of science, has also been appointed to the position of assistant professor of pathology and bacteriology in the medical school, without compensation, and Dr. Allan J. McLaughlin, assistant director of the bureau of health, to that of assistant professor of hygiene and public health. Mr. Charles S. Banks, biological laboratory, bureau of science, has been appointed as lecturer in medical entomology, without compensation. Although diligent search has been made for a properly qualified man to accept the position of assistant professor of pharmacology, it has been impossible up to the present time to fill the vacancy. Dr. Harry T. Marshall, professor of pathology and bacteriology, resigned at the close of the school year to accept a like position in the University of Virginia.

The work of the school year emphasized the necessity of securing as assistants from the student body a certain number of the best workers to augment the teaching force, the remuneration for these services being sufficient to enable such students at least in part to be self-supporting. These assistants, chosen because of their ability and merit, will in time, under the special training and personal instruction of their respective professors, become of great value to the school. The board of control, believing this plan to be for the best interests of the school, at a meeting held February 17, 1908, authorized the appointment, for the school year 1908–9, of the following demonstrators and student assistants:

One demonstrator in anatomy and histology, bacteriology and pathology, medical zoology, chemistry, and physiology, respectively, at a salary of ₱480 per annum each.

One first-class student assistant in anatomy, histology, bacteriology and pathology, medical zoology, clinical microscopy and chemistry, respectively, at a salary of ₱240 per annum each.

One second-class student assistant in anatomy, histology, and clinical microscopy, respectively, at a salary of ₱120 per annum each.

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These, with one or two exceptions, have been filled by appointment, effective July 1, 1908.

STUDENTS.

The school year opened with the following number of students in the respective classes: First year, 18; second, 10; third, 10; and fourth, 16.[a]

There were two government scholarship students in the first-year class, admitted after competitive examination under the provisions of Act No. 1632, and also one woman student.

The school year 1908–9 opened on June 8, 1908, with the following number of students in the respective classes: First year, 22; second, 16; third, 7; fourth, 10; and fifth, 12. There were no admissions as scholarship students, and two of the first-year class are women.

REGISTRAR AND SECRETARYSHIP.

The positions of registrar of the Philippine Medical School and secretary of the faculty, filled by Dr. Harry T. Marshall, were abolished at the time of his separation from the school, and the duties thereof were combined and administered by the secretary of the Philippine Medical School. Dr. James F. Kemp was appointed secretary. The duties of the secretary include the general administration of the internal business affairs of the school, namely, receipt and disbursement of all funds, receipt and issue of all property, registration of all students, and the keeping of the records of class standing; the tendering of all reports to the auditor and to the civil-service bureau; the supervision of all correspondence; the preparation of all requisitions, local and foreign, and the supervision of other duties incident to the administration of the school. This position is bonded in the sum of ₱5,000.

BUILDING.

The plans for the new building of the medical school have been pushed forward by the architect as rapidly as the time at his disposal would permit. A careful study of all conditions showed that the school proper should contain the laboratories of chemistry, bacteriology, pathology, physiology, pharmacology, histology, osteology, and general anatomy; the laboratory of clinical microscopy being placed in the new building devoted to the free dispensary of the Philippine General Hospital. In addition to the laboratories, the school building is planned to contain three lecture rooms, with the necessary places for preparation, a morgue for autopsy demonstrations, a cold storage for bodies used in anatomy and in pathology, an office, and faculty rooms.

The final plan which has been developed gives the building in the form of a cross; the two wings containing the laboratories above mentioned, and so divided as not only to provide for general instruction but also for advanced work, and private rooms. The central part provides the place for the morgue, the storage of bodies, the general storerooms, offices, faculty and lecture rooms, and on the third floor the various laboratories for anatomy and the room for the care of animals.

The entire construction will be of reenforced concrete, and when the structure is completed it will provide laboratory space without crowding for a total class estimated at 165 students. The plans are now finished in so far as the building is concerned, and work on those for the installation of the equipment is under way. The total sum appropriated for this building is ₱250,000.

EQUIPMENT.

During the past year the general equipment of the school has been largely increased. Requisitions covering the departments of chemistry, physiology, surgery, anatomy, bacteriology and pathology, medical zoology, and general clinical instruction were prepared in June and July of 1907 and supplemented

[a] A table showing results of final examinations has been omitted and filed in the Bureau of Insular Affairs, War Department.

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by others in January, 1908, as the needs of the school increased. These requisitions included apparatus of all kinds, glassware, instruments, in fact the general equipment necessary for the establishment and administration of a modern institution. One item alone, that of 63 microscopes from Germany, cost ₱11,379.89. These instruments were ordered from Leitz. The delivery of all of this equipment should be completed during the next three months. Future requisitions will need to be made for certain special apparatus for some of the departments, as the necessities may require, including the purchase of drugs and chemicals, replacing broken glassware, etc.

It is worthy of remark that repairs to apparatus of a scientific character have cost less than ₱20 during the past year. This applies to instruments of great delicacy used by students, and it speaks well for the care exercised in these matters by the better educated people of this country.

The breakage of glassware used in the chemical department and in the preparation of specimens in the pathological and bacteriological laboratories has been small and not worthy of note.

SCHEDULE OF CLASS WORK.

A schedule of class work, by hours, days, weeks, and months has been prepared during the past year and its practical working has made possible the instruction of 5 separate classes, including oral recitations, laboratory work, attendance upon clinics, lectures, special work in the bureau of science and the various hospitals of the city, without conflict or friction.

Owing to the delay incident to the opening of the school in 1907 and the necessity for covering certain special courses of instruction not otherwise provided for, an outline of work prepared for the vacation period was put into effect from March 9 to April 18, 1908. These special courses covered advanced work in chemistry, anatomy, bacteriology, and pathology, selected work in serum immunity, special instruction in autopsy work, clinical diagnosis, pediatrics and clinical medicine, practical work in obstetrics and in minor surgery, bedside diagnosis, and ward work in the hospitals, etc.

ANATOMICAL MATERIAL.

Under the provisions of Act No. 1667, which provides that the body of any deceased person to be buried at public expense and unclaimed by relatives or friends for a period of forty-eight hours after death may be devoted to the purposes of medical science, anatomical material in sufficient quantities to meet the requirements of dissection and other scientific investigation has been made available.

The Malecon morgue was opened and received its first cadaver on July 9, 1907, and up to July 31, 1908, 441 bodies have been received. All cases dying of contagious diseases are removed directly to the morgue at the San Lazaro Hospital. During the above-mentioned period 177 autopsies were held in the Malecon morgue.

The autopsy work has been under the direct supervision of Drs. Harry T. Marshall and Philip K. Gilman. The material made available by the provisions of Act No. 1677 has rendered possible the anthropologic work of Dr. Robert Bennett Bean.

The Malecon morgue is under the direct supervision of the morgue attendant and two laborers. The morgue attendant renders a daily report to the director of health of all cases received and disposed of for that day, and is directly responsible for the equipment and sanitary condition of the morgue.

One of the Filipino laborers has become very proficient in embalming and in the preparation of osteologic material. The connection of the Malecon morgue with the school has made possible the beginning of a very important pathologic museum, which is supplemented by the collections at the bureau of science. Few other medical institutions possess a greater wealth of anatomic material for the use of students.

AUTOPSY RECORDS.

A careful and complete record of all autopsies held in the Malecon morgue has been compiled and thoroughly indexed by Dr. Philip K. Gilman. This record is being kept daily and is bound in volumes containing the records of each succeeding 100 cases; it will be of great value in the future, particularly to the student of tropical medicine.

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THE FREE CLINIC AND DISPENSARY.

The school maintains a free clinic and dispensary at St. Paul's Hospital, where the poor of the city of Manila can obtain medical attention and medicines free of charge. This clinic is divided into the following departments: Surgery, pediatrics, obstetrics, eye, ear, nose and throat, and general and tropical medicine. These have been partially equipped with the usual apparatus and supplies. Requisition has been made for a complete surgical outfit for this clinic.

Between September 1, 1907, and June 30, 1908, the following number of patients visited the clinic and received treatment.[a]

Funds for 50 beds for the clinical purposes of the school were furnished by Act No. 1679 and 50 more, supported by the city of Manila, are also available and the appropriation was continued by Act No. 1873. The use of these beds by the school for clinical purposes is covered by a contract dated August 20, 1907, between St. Paul's Hospital and the board of control of the Philippine Medical School. The patients receive lodging, subsistence, medicine, dressings, and medical and surgical treatment for the sum of ₱1.40 Philippine currency per day each. Seven hundred patients have been admitted for treatment under the provisions of this contract, representing the total of 17,230 days' service from August 20, 1907, to August 31, 1908. These clinics and free beds are under the direct supervision of a clinical committee of the faculty of the Philippine Medical School, of which Dr. W. E. Musgrave is the chairman. The free beds, besides filling the purpose of providing clinical material for the instruction of students, constitute in a far greater measure a public charity to the poor and indigent of the city of Manila.

GENERAL CONDITIONS.

The faculty of the Philippine Medical School is composed of members who have been called to the islands to assume positions primarily in the school itself; of those detailed to the school from the bureaus of science and health, and in one instance from the bureau of constabulary; and of practicing physicians in Manila not connected with either of the first two bureaus just mentioned.

The policy which calls for the detail of a number of laboratory workers from the bureau of science has brought about the necessity of a considerable modification of the plan of the work in the biological laboratory of that institution, and the details and recommendations concerning the results of experience in this connection have been fully set forth in the report of the director of the bureau of science. It is owing to this intimate connection that it seemed necessary for the director of the bureau of science to mention somewhat at length certain phases of the annual report of the Philippine Medical School in his report to the secretary of the interior, it being so compiled as to give the argument for certain recommendations in regard to a more accurate distinction between the laboratory workers and those connected with clinical teaching.

The bureau of health has found it to be practically impossible to carry out its programme of deatils to the medical school, owing to the great pressure of work and the lack of men. The director of the bureau of health and the assistant director, who hold the chairs as professor and assistant professor of hygiene, have assisted at the faculty meetings, but the actual teaching has been confined to the work of Dr. Salvador Vivencio Del Rosario, who holds the position of instructor in hygiene.

The necessity of having one member of the department of chemistry in the Philippine Medical School constantly at work in the school itself developed early in the school year, and as a result provision was made for the transfer of Mr. Mariano Vivencio Del Rosario from the bureau of science to the medical school. He is now on leave of absence in the United States, but upon his return will assume charge of the laboratory work in chemistry, a certain proportion of the lectures and recitations being taken by the dean.

The free clinic has been steadily growing in popularity and in the number of patients applying for treatment. The present rooms at St. Paul's Hospital being entirely inadequate, serious overcrowding has been the result, and it has practically been impossible in the last few months for the staff to clear the

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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waiting room during hours given to this class of work. As a result it was decided by the faculty to have the dispensary open in the afternoons as well as in the mornings.

Certain repairs are necessary in the present quarters to render them even in a measure efficient and sanitary, but these will be kept at a minimum, and it is hoped that the new free dispensary to be attached to the Philippine General Hospital will be pushed as rapidly as possible.

A certain number of graduates in medicine who were government students in the United States are now returning, and therefore the great need of internes, which was such an embarrassment at the time of the organization of the school, is gradually being met.

PHILIPPINE GENERAL HOSPITAL.

The plans for the Philippine General Hospital on the pavilion system have been completed. It will be in close proximity to the bureau of science and to the laboratory building of the Philippine Medical School, an intimate relation between the school, the bureau of science, and the hospital being thus assured.

When the buildings are completed and ready for occupancy the clinical instruction will be placed upon a better footing. When this time comes there will also be a sufficient number of graduate students of the Philippine Medical School to give a greatly improved service to the patients. The establishment of the new obstetrical ward should give facilities for attacking the problem of infant mortality previously not available in these islands.

The discussion of the relation between the present clinical staff of the school and the new hospital has been given in the report of the director of the bureau of science to the secretary of the interior, as under present conditions the questions relating to the general hospital pertain to the department of the interior.

FINANCIAL STATEMENT.

(For the period July 1, 1907, to June 30, 1908.)

Appropriations Act No. 1660 (deficiency appropriation), contingent expenses, salaries, and wages	₱6,000
Act No. 1679, contingent expenses, salaries, and wages	122,000
Total	128,000
Act No. 1679, for 50 beds in St. Paul's Hospital	25,000
Grand total	153,000

The following statement represents vouchers actually accomplished and chargeable to the fiscal year 1908:

Repairs and alterations	₱7,533.69
Office supplies	1,178.93
Apparatus, equipment, and supplies	35,549.43
Furniture	3,304.97
Chemicals	2,686.20
Transportation, city of Manila	174.22
Per diems	184.00
Cablegrams	440.01
Telegrams and postage	51.76
Printing and binding	1,121.22
Light and electricity	258.45
Laundry	61.44
Ice and distilled water	1,034.60
Salaries and wages	46,576.45
Telephone	151.90
Small animals	32.00
Transportation of employees	405.70
Miscellaneous (translation charges, blueprints, exchange freight, bond, feed for small animals, etc.)	478.32
St. Paul's Hospital (contract)	19,782.00
Grand total	121,005.29

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Summary.

Contingent expenses	₱54,646.84
Salaries and wages	46,576.45
Total	101,223.29
Balance	26,776.71
St. Paul's Hospital (contract)	19,782.00
Balance	5,218.00

This balance of ₱5,218 reverts to the general fund.

Outstanding obligations	22,610.28

Appropriations by board of control for fiscal year 1908.

For 50 beds, St. Paul's Hospital	₱25,000
Contingent expenses	77,260
Salaries and wages	48,740
Total	151,000
Balance not appropriated by board of control	2,000

Respectfully submitted.

PAUL C. FREER,
Dean, Philippine Medical School.

To the SECRETARY OF PUBLIC INSTRUCTION,
Manila, P. I.

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EXHIBIT C.

REPORT OF THE PURCHASING AGENT.

DEPARTMENT OF PUBLIC INSTRUCTION,
BUREAU OF SUPPLY, OFFICE OF THE PURCHASING AGENT,
Manila, P. I., August 24, 1908.

SIR: I have the honor to submit herewith the report of the bureau of supply for the fiscal year ended June 30, 1908, showing in detail the transactions of the bureau.

I am pleased to be able to report a very successful and prosperous year. The sales aggregated ₱4,275,990.25, an increase over those for the fiscal year 1907 of 29.12 per cent. Only twice since the establishment of the bureau have the sales exceeded this year's business. In 1904 and 1905 the sales amounted to ₱5,309,474.37 and ₱4,936,976.79, respectively.

We have reduced our force of American employees by 15, eliminating the intermediate positions in classes 9 and 10, promoting the most efficient of the Filipinos to the highest grade permissible, in accordance with the civil-service rules. There have been 20 appointments of Filipinos in the classified service and but 3 Americans during the year. We have under the civil-service law, section 19, Act No. 1698, dispensed with several intermediate positions, using only a small part of the money appropriated to increase the salaries of Americans one grade, where Filipinos have been promoted to positions under them when the places were formerly filled by Americans. In other words, when we have eliminated intermediate positions formerly filled by Americans and have appointed Filipinos thereto, we have increased the salaries only where responsibilities have been increased. By this method and certain combinations in the division of cold storage, we have been able to make a very material saving over our estimated cost of operation as follows:

Salaries and wages, bureau of supply:	
Estimate	₱261,000.00
Expended	245,668.00
Saving	15,332.00
Salaries and wages, division of cold storage:	
Estimate	156,000.00
Expended	134,870.85
Saving	21,129.15
Contingent expense, bureau of supply:	
Estimate	75,000.00
Expended	84,335.26
Excess	9,335.26
Contingent expense, division of cold storage:	
Estimate	143,000.00
Expended	153,459.00
Excess	10,459.00
Total saved in salaries and wages	36,461.04
Total excess contingent expense	19,794.26
Net saving	16,666.78

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The excess in the bureau of supply was occasioned by the purchase of two new lorches and office furniture and fixtures, amounting to ₱8,816.90.

In the bureau of cold storage the excess was caused by increase in cost of coal and repairs to lorches.

PROPERTY DIVISION.

During the first 4 months of the last fiscal year we brought to a close the work of changing the system of property accounting, which proved to be an arduous and expensive undertaking. The accounts are now transferred from the stock books to cards. The complete history of every purchase for stock from its inception to the delivery into our stock warehouses appears on the face of the cards.[a]

These cards are prepared as far as possible when the order originates, and as it progresses toward completion entries are made from time to time until the goods are received, checked, priced, and ready for issue. The cards then go into the accounting division for verification and entry into merchandise account, are initialed, and returned to the division of property. The storekeepers then take up the goods for issue. Requisitions are now filled from this stock, and all orders are charged off on the issue side of the card. The balance on hand is shown in the right-hand column, so that at any time, by reference to the card, the exact amount of each item of stock on hand is shown, and verification by actual count may be made at any time. The system is rather more expensive than the old method, but is accurate, if the entries are carefully made, and, as the cards are triple checked, the equation of error is reduced to the minimum. The number of cards involved on June 30 amounted to 15,000. These were balanced, showing amount of stock on hand June 30, 1908, in three days. The actual writing up of the inventory required nearly two months. The value of stock on hand June 30, as shown by the cards, was ₱1,173,716.10, as against ₱1,217,010.38, per inventory, 1907, showing an apparent reduction in value of stock of ₱43,294.28.

COAL AND COAL YARDS.

During the year the price of coal was the highest that the government has paid since the establishment of the bureau. The cause thereof was that Japan has not bid on our contracts since the war with Russia, and with the consequent advance of price of coal in Australia and high freight rates the price paid for West Wallsend coal piled in our yard at Manila was ₱11.92 per ton of 2,240 pounds. The amount used by the government was 36,000 tons. For the fiscal year 1909 we succeeded in getting a price of ₱11.47 for Wallsend coal, a saving of ₱0.45 per ton on a contract of 40,000 tons. During the year we have had our Calle Pan yard paved and fenced and sheds constructed for the storage of coke and lime.

DELAYS IN ANNUAL ESTIMATES FOR SUPPLIES.

Attention is called to the continual neglect of the bureaus to make their annual estimates, which seriously handicaps this bureau in the matter of carrying proper stocks. Act No. 1606 provides that:

"Each head of a civil department, bureau, or office shall submit annually, within thirty days after the passage of each regular annual appropriation bill, to said purchasing agent an estimate of articles or supplies which will probably be required for the transaction of its official business for the fiscal year for which appropriations are made." * * *

Although the appropriation bill was passed the middle of June, only the following bureaus have filed estimates: Weather bureau, constabulary, agriculture, quarantine, internal revenue, board of health, and bureau of printing.

We are expected to meet the demands of the bureaus, and complaints of delays in delivering orders are sure to follow if articles called for are not in our stocks or in the Manila market. These open-market purchases always carry a profit to the merchant of from 40 to 60 per cent; hence the cost of supplies in this particular is excessive, and we are frequently forced to ac-

[a] A sample of these cards has been omitted and filed in the Bureau of Insular Affairs, War Department.

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cept what the market affords. Substitutes are often requested in many cases for inferior material simply because the bureaus do not send in their estimates.

It is frequently stated by bureau chiefs that they can not estimate their requirements. They estimate the amount of funds required, and I can see no reason why they can not estimate their material requirements.

The bureau of printing has never failed to make its estimate, and it keeps us informed regularly of its possible needs over and above its regular lines, and hence it is always supplied with the best material at the best prices.

The bureau of public works has not made a regular annual estimate for three years. Its requirements are greater and its employees are harder to please than all the other bureaus together, and yet they do not comply with the law, which is mandatory, to supply us with an estimate of their probable needs.

An estimate in fullest detail with specifications complete should be supplied for all material that they are likely to require. I mention this bureau because its business affects in a measure nearly all departments of the insular and provincial governments, and its estimate is the most important.

I respectfully suggest that the secretaries of the various departments be requested to direct the bureau chiefs under their control who have not already filed estimates, to do so immediately, in accordance with Act No. 1606.

CEMENT.

During the year 1907 our contract for cement called for deliveries from the bodegas of the contractor, as required. This plan was very unsatisfactory. Cement bearing our mark was delivered by the contractor to local and provincial contractors, and it became practically impossible to distinguish the cement shipped by the bureau of supply and that shipped for the use of people outside of the government. Large quantities of cement of the same brand (Green Island) were rejected by the department of sewers and waterworks on tests made by the bureau of science. Such shipments were turned back to the contractor, and may have been issued to the bureau of supply or shipped to the provinces on rush orders. There were no distinguishing marks. The demand was so great that we were unable to have on hand any adequate supply of tested cement. The price we were paying to handle and warehouse this cement was about ₱0.25 per barrel. To avoid all possible complications, to secure complete control of deliveries and to be able to have carefully tested cement always on hand, we secured an additional warehouse and are now making all deliveries direct. We were paying about 25 cents per barrel to the contractor to warehouse our cement, as above stated, and under the new arrangement we were able to handle it at about 15 cents, making a saving of ₱4,000 per annum.

FORAGE.

The same plan which proved so unsatisfactory in regard to cement has been really disastrous as to forage. We have had more trouble and annoyance with this contract than any other. We have had a struggle to keep the hay up to grade. The contract price during the year 1907, which is still in force, was ₱95.90 per ton of 2,240 pounds. Shipment after shipment has been rejected, and the prices scaled down to quality offered. We refused to accept two shipments at a higher price than ₱60 per ton, and two others were rated at ₱75 per ton. This plan was continued until we compelled delivery of hay up to grade. I am now advertising for the new contract and hope to get the price materially reduced. I am calling for bids under the present system, allowing the contractor to make deliveries from their bodegas in Manila, subject to inspection and acceptance by the bureau of supply, and also for deliveries direct to our wagons or forage sheds at Manila. I am also asking for bids in New York, Seattle, and San Francisco, delivery f. o. b. at the points mentioned. The question of supply of forage is too important for experiment. The original plan of purchasing all hay and grain in the United States was most satisfactory and economical.

DIVISION OF ACCOUNTS AND DISBURSEMENTS.

The statements show in tabulated detail the history of the year's business and the present financial standing of the bureau and may be epitomized as follows:

"Sales aggregated ₱4,275,990.23, an increase of 29.12 per cent over those for the fiscal year 1907, and in amount have only been exceeded twice in the history

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of the bureau, viz, in the fiscal years 1904 and 1905, when they aggregated ₱5,309,474.37 and ₱4,936,976.79, respectively. This increase of 29.12 per cent in business was handled at an increase of only 3.14 per cent in operating expense, the total contingent expense for the year being ₱329,521.87. More than half this increase in expense was occasioned by the building of two new lighters costing ₱5,820.34, which amount, together with ₱2,996.56 expended for similar property, is properly chargeable to plant and not to operation, but has been shown in Exhibit I as an expense of the year for the purpose of comparison with preceding years. Salaries and wages paid only exceeded the amount paid during the preceding fiscal year by only ₱2,795.73, and as the extra work on inventory and numbering of stock during the first four months of the fiscal year cost over ₱5,000, it is evident that the increased business was handled at a less labor cost than that of the fiscal year 1907. The gross earnings for the year were ₱369,670.79 and the expenses ₱325,638.10, leaving a gain of ₱44,032.69. The percentage of expenses of bureau to cost value of merchandise sold was 8.62 per cent, which illustrates vividly the effect of the difference of total business on the yield from surcharge fixed by law and the inadvisability of any change in the surcharge, the total of which may be affected largely by authority given to various bureaus to purchase without the intervention of the bureau of supply.

"The merchandise on hand on June 30, 1908, cost ₱1,165,660.04, and this added to the other assets, consisting of cash, merchandise paid for but not received, and accounts due the bureau from other bureaus and provinces, amounted to ₱2,699,440.65. The working capital (appropriations) of the bureau amounts to ₱1,400,000, while its other indebtedness June 30, 1908, amounted to ₱113,915.28, making a total liability of ₱1,513,915.28 and leaving a surplus of ₱1,185,525.37.

"This surplus is, of course, constantly in use in the business, and without it the capital of the bureau would be insufficient to handle the transactions committed to its care. With a stock of merchandise valued at ₱1,165,660.04, ₱410,568.15 advanced for importation of goods from the United States, and the bureaus and provinces carried for ₱721,675.41, it is evident that our capital alone would not suffice. The saving made by the government by buying and carrying a large stock amounts to from 25 to 50 per cent of the amount invested in such purchases. The advances for the United States purchases are absolutely necessary, since otherwise we could not get the goods, and the indebtedness of the bureau and provinces unless carried by us would have to be met by appropriation, thus using the general reserve instead of our special surplus, which in effect is part of that general reserve. The withdrawal of ₱350,000 from our surplus about a year ago and placing it to the credit of the bureau of public works, for the purpose of constructing a general warehouse at some indefinite time in the future, deprived this bureau of the opportunity of saving an additional ₱50,000 or more to the government, since the judicious investment of this amount in laying in a stock of such merchandise as we are constantly obliged to buy at almost retail prices to fill current requisitions would have enabled us to deliver the goods at 25 to 50 per cent less, with scarcely any increase in expense."

EXHIBIT G.—*Comparative statement of sales from establishment of bureau to June 30, 1908.*

Fiscal year.	Percentage of increase.	Percentage of decrease.	Amount of sales.
1902			₱1,970,549.78
1903	59.05		3,134,141.98
1904	69.41		5,309,474.37
1905		7.01	4,936,976.79
1906		26.97	3,605,250.07
1907		8.146	3,311,572.52
1908	29.12		4,275,990.23
Total			26,543,955.74

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EXHIBIT I.—*Comparative statement of operating expenses from establishment of bureau to June 30, 1908.*

Fiscal year.	Percentage of increase.	Percentage of decrease.	Salaries and wages.	Contingent expenses.	Total operating expenses.
1902			₱152,932.44	₱144,776.44	₱297,708.88
1903	46.61		275,742.68	166,684.28	442,426.96
1904	36.49		384,410.84	219,463.07	603,873.91
1905		7.03	380,486.68	180,926.04	561,412.72
1906		36.07	267,110.05	91,811.52	358,921.57
1907		10.99	242,390.88	77,095.92	319,486.80
1908	3.14		245,186.61	84,335.26	329,521.87
Total			1,948,260.18	965,092.53	2,913,352.71

NOTE.—Percentage net (cost) value of sales compared with operating expenses runs as follows: 1902, 16.51 per cent; 1903, 15.52 per cent; 1904, 12.49 per cent; 1905, 12.50 per cent; 1906, 10.92 per cent; 1907, 10.77 per cent; 1908, 8.62 per cent.

There is included in above contingent expenses for fiscal year 1908 the sum of ₱8,816.90 paid for office furniture and fixtures and a new lorcha, which is not properly expense of operation, but is included therein for comparison, since in previous fiscal years no distinction was made between payment for expendable property and furniture and fixtures having an inventory value.

In connection with the above report, and in view of frequent efforts of some bureaus and provinces to buy independently, as well as suggestions from disinterested dealers in Manila that the government should have all purchases for public use pass through their hands, I take the opportunity of giving the following short synopsis of a more lengthy argument made by me upon the subjects in a special report:

The bureau of supply, a government central purchasing agency, was established because it was believed to be both a necessity and an economy. This belief was founded upon certain general principles and conclusions drawn from acknowledged principles and long experiences, to wit:

1. Consolidation and concentration, in production, manufacture, and distribution, by use of greater capital, saving of waste in time and material, use of the combined knowledge and experience of individuals, and a dozen other important factors too well known to be enumerated, work for economy.

2. Consolidation and concentration, by increasing responsibility while decreasing the number of those responsible, renders more easy supervision and systemization, therefore working toward the elimination of graft, dishonesty, and favoritism.

3. The cost of the government is primarily an expense, not an investment, and decrease in the cost inures to the benefit of all. Hence, in these expenss, which most closely resemble investments, it is generally bad economy that a few should benefit at the expense of all, and particularly so when the benefit to the few is only a fraction of the total cost to all.

4. The capital invested in importing and manufacturing in the Philippine Islands, the credit which importers are able to obtain in the United States and foreign countries, and the facilities for handling large orders are not and have not been for the last seven years sufficient to enable Manila merchants to handle government business economically.

5. The desire evinced in some quarters to have the government distribute small retail orders by having each bureau purchase for itself and the purchasing agent buy only for immediate consumption, certainly does not arise from the conviction that such course will save money for the whole people and decrease taxation.

6. In weighing the motives of one engaged in trade who suggests a course of action which affects his own welfare, it is not good common sense to credit him with altruism rather than self-interest except upon strong evidence.

7. If 10 different bureaus desire different quantities of the same article, it is cheaper to buy the total quantity in one purchase than to buy in separate lots, and if it be desired to keep a month's or a year's supply on hand ready for issue, it is cheaper to keep it at one place under single supervision than in 10 different places under separate supervision.

8. Prices and the cost of transportation, handling, supervision, storage, and delivery do not increase in the same ratio as quantity. Hence, wholesale prices are lower than retail.

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9. Knowledge is the growth of experience which is in proportion to opportunity, and the knowledge and ability to perform service of a general agent is usually greater than the sum of the knowledge and ability of his separate clients, and vastly greater than that of any one of them.

Organized in consequence of the belief in its necessity and economy, the bureau of supply, though hampered frequently in the exercise of its full power for good, has, by its seven years of experience, been able to accumulate data which are sufficient to prove the following propositions, viz:

1. The bureau of supply can and does import, store, and deliver goods at less cost to the government than the same services can be rendered by individual merchants because of its lower freight rate, lower insurance rate, lower brokerage rate, lower depreciation cost, and lower administration cost in addition to the advantages of larger capital, larger purchases, and absence of selling expense.

2. When the bureau of supply, in pursuance of instructions, has ceased importing, carrying, or buying in Manila in large quantities, certain lines of goods upon representations that Manila merchants would furnish them from their stocks at reasonable prices, the prices charged have as a rule consistently advanced and the cost to the government has increased, notwithstanding the fact that the cost of production and importation has not increased.

3. Frequently, when the policy above mentioned has been followed the government has been unable to secure the goods in Manila even at the advanced price without long and expensive delay.

4. Half of the capital of the bureau of supply is continually advanced in behalf of debtor bureaus and serves to same appropriations, thus performing the same service as if it were returned to the general fund and taking out of general cost calculations the item of interest upon capital to that extent.

5. As a rule wherever authority to purchase, without the intervention of the purchasing agent, is given to individual bureaus, the total cost to the government is increased. This might be predicated from the general principles above laid down and experience proves that most bureaus consider it a gain if they can purchase at any price less than 10 per cent above bureau of supply cost price. They are urged by the desire to make a better showing for their own bureaus and do not take into account the fact that the expenses of the bureau of supply are in the nature of a fixed charge to be met in the last analysis from the public revenue and that any price above the cost price to the bureau of supply occasions loss to the government as a whole.

6. The centralization of buying under one head has produced, in the seven years during which it has continued, an accumulation of data upon methods of business, localities, of production, comparison of prices, rates and methods of transportation which, rendered accessible by classification and indexing, is available at any time and can be used by anyone, thus supplying in more certain form and with greater exactness, information which ordinary dealers can only obtain from highly trained and expensively paid experts.

7. The necessity for a centralized purchasing department requires the organization and payment of some staff. Every increase of value of business is thereafter handled at a less amount of cost.

8. The bureau of supply is better able to handle a large business in the future than ever before and has, for the next fiscal year, made arrangements for saving expenses by securing a reduction of freight rates from the United States to $6 per ton and the handling of cargo from lighters by means of a steam crane.

DIVISION OF COLD STORAGE.

The division of cold storage report indicates a net decrease in receipts amounting to ₱15,892.28 for the year. This is explained by the reduction in the quantity of ice used by the subsistence department and the practical stoppage of shipments of ice to Camp Stotsenburg, where the military have constructed a plant to supply that post.

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The following table is significant:

	Increase.	Decrease.
Cold storage	₱3,301.60	
Ice		₱19,228.28
Water		2,268.23
Electric current	494.50	
Transportation	1,000.21	
Miscellaneous	807.92	
	5,604.23	21,496.51

Net decrease, ₱15,892.28.

Attention is respectfully called to my recommendation of last year that the government purchase the Fabrica de Hello de Manila and supply ice and water to the entire population at a greatly reduced rate, making the division of cold storage a great public utility. The Philippine government have to-day a plant which cost approximately ₱1,200,000.

Act No. 315, by which we are prevented from entering into competition with so-called private enterprise, seems to me an unjust discrimination against the general public and the taxpayers in favor of military and civil employees, as a rule nontaxpayers.

The ice plant is a revenue producer, and if the plant is put in perfect repair and all claims of the Fabrica de Hello de Manila be satisfied, either by purchase or otherwise, giving the government exclusive control of the ice and distilled water business, the net earnings now amounting to ₱340,000 per annum can be greatly increased, and ice be supplied to the public generally at ₱0.01 per pound.

Our cash business on sales of ice has fallen off steadily for the last two years.[a] The cash sales of 2-cent ice two years ago amounted to from ₱350 to ₱450 per day, while those for July, 1908, were ₱103, and for August about ₱85.

Complaints have frequently been made against our competition with the Fábrica de Hello de Manila. Orders have from time to time been given which have prevented our selling salt ice and ice to sorbete peddlers, to messes, etc., which have been strictly carried out. This, coupled with the fact that the Fabrica de Hello de Manila is selling ice at 2 cents, with a discount of 25 per cent, accounts for our loss of revenue.

Our price of ₱0.02 per pound for ice sold to the general public for cash at the plant was fixed upon the basis of Fábrica de Hello de Manila selling their product at ₱0.02 per pound delivered. Hence their selling ice at ₱0.02, less a discount of 25 per cent, is hardly a fair competition with the government plant.

Attention is respectfully invited to the necessity for immediate repairs to the cold-storage side of the plant. It is now seven years since the building was completed, and the heavy timbers are all of Oregon pine. Where these timbers are exposed to heat and cold examination has shown them so decayed as to require constant renewal. This has been done as far as possible, but I am of the opinion that steps should be taken to renew all these timbers with steel and reenforced concrete. This would entail large expense, but certainly would be justified from a business point of view. It can be done without interference with the business of the plant, if taken section by section—say one section each year until completed.

I respectfully recommend that the insular architect be directed to consult with the chief of the bureau of supply and report upon the requirements of the situation.

We are up against this proposition: We have over ₱1,200,000 invested in the ice plant. Nothing has been charged off for deterioration. The army are cutting down their cold-storage space each year, as they increase the ice plants at the large posts. Their plant at McKinley is being largely increased. They have established a plant at Stotsenburg, and others are likely to follow.

Our hands are tied, and we can not meet competition. New competition is likely to spring up at any time in small plants. Large repairs are necessary; hence unless steps are taken to establish this great plant on a permanent basis

[a] A statement showing cash sales of ice has been omitted and filed in the Bureau of Insular Affairs, War Department.

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as a public utility, we will some day find on our hands a deteriorated plant without business sufficient to justify its operation.

The recommendation for the construction of an additional 30-ton ice tank by the acting chief of division of cold storage is not approved or recommended, unless steps are taken to improve the business of the plant.

The machinery division is in perfect condition, is capable of a much greater service than is now required of it, and will last without renewals for many years.

During the year we have removed the old coal bunker and have constructed new ones at the door of the boiler room, which will reduce considerably the handling of coal.

For further details attention is respectfully directed to the reports of chiefs of divisions herewith.[a]

Respectfully submitted.

E. G. SHIELDS, *Purchasing Agent.*

The SECRETARY OF PUBLIC INSTRUCTION,
Manila, P. I.

BUREAU OF SUPPLY, PROPERTY DIVISION,
Manila, —, 1908.

SIR: I have the honor to submit the following annual report of the property division for the fiscal year ended June 30, 1908:

During this year a complete inventory of the stock of the bureau was taken. The expense of operation was greatly increased thereby, but the result has apparently fully justified the expenditure.

A new system of stock accounts was introduced, the principal feature of which was the adoption of the stock number for various items of supplies in the several warehouses of the bureau and the substitution of a stock card for the loose-leaf ledger. The labor involved in separating and classifying the various stock items, and numbering the same, was a herculean task, as a thorough and complete inventory and auditing of the stock accounts had not been previously undertaken. In a business where more than 8,000 items of stock are carried it was to be expected that irregularities would be found in some of the accounts, as well as in the stock items themselves. It might be mentioned that the earthquake of 1907 materially assisted in mixing some of the items of stock. However, by great perseverance the stock accounts and the stock have been put in good condition. Beyond the fact that the stock card system has introduced the innovation of the stock number, it is yet to be determined that it is superior to our former system of stock accounts, but its apparent superiority seems to be in the strictness in which it is carried out.

At the present time there are very few, if any, irregularities in carrying out the new system, but the completeness thereof necessitates more work, which will naturally increase the expense of operation. Improvements in minor details may suggest themselves from time to time, yet the system is being ably conducted at present.

The fiscal year of 1908 marks the passing of the practice of issuing supplies on memorandum receipt. This was a fertile source of trouble which contributed its full share to the irregularities in the property accounts. After the elimination of the evil of memorandum receipts for property, there followed a system, adopted by many of the bureaus in Manila, of forwarding their duplicate copies of requisitions direct to the bureau of supply, instead of through the regular official channels. Out of 1,688 requisitions filed between April 13 and June 30, 1908, there were 250 duplicates received direct by this bureau, and in nearly every instance they were marked "Rush," or were brought by a representative of the bureau making the requisition, with the request for an immediate issue of the supplies requisitioned for.

In many instances it was especially noticeable that requisitions which were marked "Rush" were for supplies which, if the requisitioner had used a reasonable amount of foresight and diligence, there would have been no necessity of a rush. Unnecessary rush requisitions should be discouraged, as they will inevitably lead to inefficiency in the performance of regular work which must necessarily be delayed to fill rush requisitions.

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[a] The report of the correspondence division has been omitted and filed in the Bureau of Insular Affairs, War Department.

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Our yearly inventory is in progress at the present time and is being accomplished rapidly and economically. The balancing of 15,000 stock cards was accomplished in three days, and it will not be necessary to suspend business for any length of time in any of the departments this year. A plan has been adopted by the acting purchasing agent to keep a clerk employed in examining and auditing stock cards and in inspecting and checking stock. This plan should work admirably and greatly assist in keeping the stock correct.

IMPORT AND PRICING DIVISION.

The work in this division was materially increased this year on account of larger importations from foreign countries and because of the completeness of the new stock card system it was necessary to revise that of pricing supplies in order to show the distribution of the different items of importation charges. This has increased the work of pricing about 40 per cent over the old system, with no apparent advantageous results. If only one item of supplies had been received on each of approximately 1,500 invoices, or if the same combination of items were received each time, the data—freight, lighterage, insurance, New York office, and exchange—appearing on the stock card would be invaluable; but as this is not true, the freight and lighterage varying with each shipment received, it will frequently be necessary to consult the original invoice and packing sheet for authentic data. It is suggested that much clerical work could be eliminated without impairment to efficiency by discontinuing the practice of distributing the various items of importation charges over the individual items of stock on the stock card, and reverting to the old system of showing net cost and selling price only.

CIRCULAR PROPOSAL DIVISION.

There were 77 circular proposals on which contracts were awarded to local firms during the fiscal year. These contracts, let to the lowest competitive bidder, amounted to ₱1,401,390.31, and exceeded last year's for the same class by ₱221,242.20.

CITY SHIPPING AND RECEIVING OFFICES.

The work of these departments, which requires carefulness, diligence, and sound judgment, has been handled with a high degree of efficiency, and has been disposed of in a highly satisfactory manner. On account of the delay in delivery and the presentation of purchase orders and invoices at the same time the supplies were delivered at the city receiving office, it became necessary to adopt the plan of billing them into stock on a serial receipt pending the the presentation of proper invoices and buyers' orders.

PROVINCIAL SHIPPING OFFICE.

This office superintended the receipt and shipping on an average of 320 tons of cargo per week.

In addition to the labor involved in shipping 173,975 packages to the provinces, this division attended to the filing of papers and clearing through the custom-house of 60,523 packages received from foreign countries. There were also 6,228 bills of lading made in this division and 3,280 packages prepared for mailing.

COAL YARDS.

The receiving and delivering of coal has been ably superintended, and some needed improvements were made during the year. Calle Pan coal yard, through long usage and climatic conditions, had become very muddy. The coal mixed with the soft earth with the result that a deep excavation was gradually made. This has been filled in and paved over, and the yard is now in excellent condition.

A corrugated-iron bodega has been built large enough to store 50 tons of coke. The increased cost of transportation for the fiscal year 1909 will materially affect the profit in handling coal. Arrangements should be made to deliver from 2 to 3 months' supply of coal to the various bureaus in Manila at one time, so that the hauling may be done as economically as possible. A wagon scale would greatly facilitate the weighing of coal at the division of cold storage, and would be a saving in time as well as in cost of transportation.

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The present slow process of weighing coal by the basket, together with the increased cost of trucks, will reduce the profit on coal delivered to the ice plant to a very small margin.

BILLING DIVISION.

Near the close of the year the billing division was transferred to the disbursing office. The records of this division were especially convenient and valuable to the property division. More than 8,000 vouchers, provincial and inter-bureau, were prepared by this division. The property invoiced on these vouchers consisted of approximately 18,000 issues from stock; supplies purchased and delivered direct on 16,000 purchase orders, and 1,000 shipping invoices for United States purchases.

PURCHASES AND SALES.

The following condensed statement of purchases and sales of supplies is added hereto for your information:

Purchase of supplies.

Imports from United States	₱601,576.32	[a] ₱1,041,056.38
Imports from other countries	65,944.35	[a] 65,109.03
Purchases in Manila	2,114,979.33	2,649,507.41
	2,782,500.00	3,755,672.82

The lighterage charges on the imports from the United States are paid at Manila, but they are included under the item "Imports from the United States" for convenience in comparison.

Sales for fiscal year 1908.

Departmental	₱3,079,215.70
Provincial	741,653.36
Total (without 10 per cent surcharge)	3,820,869.06

From the above statement it will be noted that the sales exceeded the purchases, thereby reducing the stock of the bureau, which is in line with the policy of a gradual reduction of supplies carried in stock.

The following table will show some of the principal items of supplies purchased in the United States, their value, and from whom they were purchased:

Mergenthaler Linotype Company, linotype machines, type, printing supplies	₱19,389.18
Ordnance Department, United States Army, arms and ammunition	37,615.24
Ginn & Co. and World Book Company, books	52,226.14
J. M. Hermann & Co., shoes for constabulary	60,582.38
Pancoast, Rogers & Richards, drive pipe for public works	30,865.74
Quartermaster Department, United States Army, socks, cot covers, ponchos, and flags	30,502.08
Tileston & Hollinsworth, paper for bureau of printing	8,450.66
American Writing Paper Company, paper for bureau of printing	23,873.20
United States Steel Products Company, steel, bridge material, I beams, etc	240,478.70
Expanded Metal and Corrugated Bar Company, steel bars	44,259.00
	548,242.32

The largest purchases made in the United States were those for steel products. Approximately 2,100 tons of bars, beams, and channels were imported. Plain steel bars in commercial lengths were brought from the United States and put into our bodegas at the remarkably low cost of ₱3.43 per 100 pounds; plain steel bars in 30-foot lengths at ₱3.45 per 100 pounds; and corrugated bars at ₱4.44 per 100 pounds.

[a] Sales value.

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These steel bars were purchased on estimates of the bureau of public works, and are being used for reinforced concrete construction. The beams and channels were also purchased on estimates of the same bureau.

Respectfully submitted.

JOHN LOOMIS,
Acting Property Officer, Bureau of Supply.

The PURCHASING AGENT,
Bureau of Supply, Manila, P. I.

BUREAU OF SUPPLY,
DIVISION OF ACCOUNTS AND DISBURSEMENTS,
Manila, ——— 1908.

SIR: I have the honor to submit herewith my annual report as chief of the division of accounts and disbursements for the fiscal year ended June 30, 1908.

The statements show in tabulated detail the history of the year's business and the present financial standing of the bureau, and may be epitomized as follows:[a]

The changes made in some of the details of the accounting during the last year have not been long enough in effect to justify an expression of opinion upon their merits, but it is already plain that unless all entries upon any records whatever affecting the accounts of the bureau be first submitted to this division for approval confusion will result and an immense amount of time will be lost in rechecking and correcting. The transfer of the billing department to this division has removed some of the trouble, but it should be remembered that the so-called "property cards" form an integral part of the accounts of the bureau, and entries made thereon of returns, cancellations, and adjustments, unless first checked and noted for adjustment on the "merchandise" account in the general books, will always be an endless cause of trouble.[b]

Respectfully submitted.

FRANCIS H. GARRETT,
Chief, Division of Accounts and Disbursements.

The PURCHASING AGENT,
Manila, P. I.

BUREAU OF SUPPLY,
DIVISION OF COLD STORAGE,
Manila, P. I., July 31, 1908.

SIR: In the absence of the chief of this division I have the honor to submit the following report of the division of cold storage for the fiscal year ended June 30, 1908.

The total receipts for the fiscal year were ₱628,204.24 and the expenditures ₱288,330.35, making the net receipts ₱339,873.89. The gross earnings for the same period were ₱616,673.09 and the cost of operation was ₱276,211.06. The net earnings of the plant for the fiscal year just closed were, therefore, ₱340,462.03.

The decrease in gross earnings from the previous fiscal year amounts to ₱15,892.28, and is explained as to items by the following table.[c]

The amount of ice supplied to the Subsistence Department, United States Army, was 417,024 pounds less than during the previous fiscal year, and the amount sold to the officers and enlisted men personally was less than formerly.

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department. Quoted in the report of the purchasing agent.

[b] The following tables have been omitted from this report and filed in the Bureau of Insular Affairs, War Department:

Exhibit A—General statement of bureau assets and liabilities.
Exhibit B—Financial statement of appropriation, "purchase of supplies."
Exhibit C—Supplies account.
Exhibit D—Statement of operating expenses and earnings.
Exhibit E—Purchase of supplies, Manila and New York offices.
Exhibit F—Sales of supplies.
Exhibit G—Comparative statement of sales.
Exhibit H—Comparative statement of surcharge (earnings), 1902 to 1908.
Exhibit I—Comparative statement of operating expenses, 1902 to 1908.
Exhibit J—General statement of collections and deposits.
Exhibit K—Abstract of interbureau sales and balances due.
Exhibit L—Abstract of provincial sales and balances due.

[c] Omitted and filed in the Bureau of Insular Affairs, War Department.

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It is probable that these sales will continue to become smaller as the number of stations is reduced and the troops assembled in large posts equipped with ice-making apparatus. An ice plant recently installed at Camp Stotsenburg has had the effect of largely reducing our shipments to that post.

In comparing the expenditures with those for the fiscal year 1907 due consideration should be given to the increased cost of coal and forage, amounting to 11 per cent and 6 per cent, respectively. This is an item of considerable importance, for the amount expended for coal alone forms somewhat more than 30 per cent of the total cost of operation.

During the fiscal year the following contracts pertaining to this division were made by the secretary of public instruction:

With the Quartermaster's Department, United States Army:

1. Contract for 4 rooms, containing 141,448 cubic feet of cold-storage space. for the use of the Subsistence Department, United States Army.

2. Contract for Room No. 5, containing 39,840 cubic feet of cold-storage space, for the use of the Subsistence Department, United States Army, as sales and issue room.

With the Subsistence Department, United States Army:

3. Contract for furnishing ice to the Subsistence Department.

With the Ordnance Department, United States Army:

4. Contract for furnishing ice to the ordnance depot.

Recommendation has recently been made by the chief of this division that an additional 30-ton ice tank be added to the equipment of this plant. Such an enlargement of the tank capacity is deemed necessary, because during the last three months of the fiscal year just closed we were producing ice to the maximum of our facilities. Should the demand for ice be largely increased, either from the breaking down of the commercial plant or from an additional supply required for the use of the army and navy, this plant would probably be unable to supply it with the present equipment. We have the machine capacity to produce a hundred tons of ice daily. It is strongly recommended that the tank capacity be increased accordingly, not only to enable us to supply any demand that may arise, but also because we have already been compelled in the hot season to force the plant beyond the point of most economical production.

New regulations for the sale of ice and distilled water and for the rental of refrigerating space, approved by the secretary of public instruction, were issued by the purchasing agent and made effective January 15, 1908. The principal point of difference between the new rules and those under which the business of the plant was formerly conducted is that under the present system the cold-storage charges are computed for the time the merchandise is actually in storage, whereas formerly the charges were based upon the amount of goods taken out of storage during the month, without regard to how long they had been in storage. The present regulations, which are as follows, are believed to be very equitable and satisfactory:[a]

The arrangement for delivering distilled water in cases of six 2-quart glass bottles, started at the suggestion of the purchasing agent near the end of the fiscal year 1907, has become so popular that we have found it difficult to get bottles fast enough to meet the demand. This method of delivering distilled water, which for cleanliness and convenience it seems hard to improve upon. will undoubtedly become general. In order to handle this business. it was necessary to buy another delivery wagon.[b]

Respectfully,

J. C. VICKERS,
Acting Chief, Division of Cold Storage.

The PURCHASING AGENT,
Manila, P. I.

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

[b] The following statements showing the transactions of this division have been omitted and filed in the Bureau of Insular Affairs, War Department:

I. Statement of receipts.
II. Statement of expenditures.
III. Ice statement (in three parts).
IV. Statement of earnings.
V. Statement of cost of operation by months.
VI. Cost of operation by items and divisions (in four parts).
VII. Comparative statement of earnings and cost of operation.
VIII. Comparative statement of earnings by items: 1902–1908.
IX. Comparative statement of expenditures, May 1, 1901, to June 30, 1908.
X. Sales of ice, fiscal years 1902–1908.

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EXHIBIT D.

REPORT OF THE DIRECTOR OF PRISONS.

DEPARTMENT OF PUBLIC INSTRUCTION,
BUREAU OF PRISONS,
Manila, June 30, 1908.

SIR: I have the honor to submit herewith the report of the bureau of prisons, for the fiscal year ended June 30, 1908:

DISTRIBUTION OF PRISONERS.

The prison population of the various prison stations this date is as follows:

Bilibid Prison	2,789	
Hospital "B"	156	
		2,945
Camp Avery		639
Iwahig Penal Colony		478
Malolos (special)		88
Laguna (special)		222
Leyte (special)		32
Samar (special)		2
Santo Domingo, Laguna (special)		20
Calarian Prison (special)		6
Luneta Police Station (special)		21
Hospicio de San José		13
San Lazaro Hospital		71
		4,537
Provincial prisons:		
Antique	7	
Albay	39	
Ambos Camarines	22	
Benguet	5	
Bataan	2	
Batangas	28	
Bulacan	22	
Bohol	22	
Cagayan	27	
Cavite	31	
Cebu	137	
Capiz	37	
Ilocos Sur	38	
Provincial prisons—Continued.		
Ilocos Norte	57	
Iloilo	85	
Isabela	14	
Laguna	28	
Lepanto-Bontoc	20	
Leyte	61	
Mindoro	9	
Masbate	1	
Misamis	26	
Moro Province	98	
Negros, Occidental	51	
Negros, Oriental	38	
Nueva Ecija	36	
Nueva Vizcaya	3	
Palawan	10	
Pampanga	28	
Pangasinan	162	
Rizal	36	
Romblon	9	
Surigao	16	
Samar	53	
Sorsogon	20	
Tarlac	22	
Tayabas	24	
Union	23	
Zambales	14	
		1,361
Total insular and provincial prisoners		5,898

The total number of these two classes of prisoners June 30, 1907, was 5,593, and the increase therefore is 305, or 0.0545+ per cent.

The increase in the number of insular prisoners over last year is 217, or a trifle over 0.05 per cent, and of provincial prisoners is 88, or 0.069+ per cent.

The last annual report showed a decrease in the number of prisoners from that of the previous year (1906).

The increase in the number of prisoners shown in this report brings the total number of prisoners up to practically what it was June 30, 1906.

BILIBID PRISON.

The prison population on June 30, 1907, was 3,533 and on June 30, 1908, 2,945, the decrease of 588 being due to excess of transfers of prisoners to other stations over those to Bilibid.

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The following changes in population occurred during the year:

On hand June 30, 1907	3,538	
Received by commitment	2,564	
By transfer from other stations	580	
Captured	3	
		6,680
Released by expiration of sentence	1,603	
Released on bond	85	
Cases dismissed	81	
Released by order of court	33	
Released by payment of fine	99	
Pardoned	135	
Satisfaction of fine and sentence	8	
Deported	52	
Escaped from Hospital "B"	2	
Executed	22	
Paroled	3	
Died	113	
Transferred to other stations	1,499	
		3,735
On hand June 30		2,945

From the foregoing will be noted a total change in population of 6,882 prisoners, or a daily average of over 18.

MAINTENANCE.

The gross cost of maintenance during the year, which includes all expenditures for salaries and wages of officers and employees of Bilibid Prison (except those in the industrial division), subsistence, office and prisoners' supplies, illumination, burial expenses, hospitals, gratuities, transportation to their homes of discharged prisoners, general repairs and improvements, per capita for the year was ₱168.50, or a daily average of ₱0.46. This includes Bilibid Prison, Iwahig Penal Colony, and the cost to this bureau of Bilibid prisoners maintained at other prison stations.

The daily per capita cost per prisoner for Bilibid Prison, exclusive of Iwahig Penal Colony, was ₱0.4725, and for Iwahig Penal Colony ₱0.425.

The net cost of maintenance for the year at Bilibid Prison was ₱0.382 per diem and at the Iwahig Penal Colony ₱0.407.

The foregoing is calculated in the same manner as for the last annual report; i. e., including Bilibid prisoners at Iwahig Penal Colony and other stations, for the purpose of comparison therewith.

The excess of the average gross cost per prisoner during the present year over that of the preceding was due to the fact that there was a daily average of 563.3 prisoners absent from Bilibid Prison performing labor on public works, etc. Had these prisoners remained at Bilibid Prison the gross cost per capita for the year would have been ₱158.44 and the daily average cost ₱0.432+, as against ₱158.64+ and ₱0.434+, respectively, the preceding year.

It will be observed that the net cost of maintenance of prisoners at Bilibid Prison was less than that of the preceding year.

SUBSISTENCE.

The average cost of subsistence for prisoners during the past year has been as follows:

	Americans and Europeans.	Natives and Asiatics.
Bilibid Prison	₱0.3673	₱0.1628
Hospital "A"	0.2555	0.2555
Hospital "B"	.....	0.3055
Corregidor	.....	0.1615
Iwahig Penal Colony with products taken up at market value	.....	0.178350
Iwahig without colony products	.....	0.142113

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DISCIPLINE.

The conduct of prisoners as will be noted in the following table is very gratifying and a large percentage of the first class have a conduct record of 100.

First conduct class	1,918
Second conduct class	490
Third conduct class	330
Serving sentence	2,738
Detention	207
Total	2,945

IMPROVEMENTS AND REPAIRS.

The improvements and repairs at Bilibid Prison during the year have consisted of the erection of suitable guards' quarters, the building of 1,000 feet of prison wall of reenforced concrete surrounding the hospital extension, the beginning of the erection of the new hospital structure of reenforced concrete, the manufacture of the double iron gates for the entrance to the extension, the manufacture and installation of 1,000 iron sanitary prison beds, a water-distilling plant, and iron guard cage manufactured and installed in Department A. A 28-foot extension was made to the lumber-storage shed, and 103 feet of wire fence 16 feet high, and 123 feet of wire fence 14 feet high, was built to reenforce the prison stockade. The outer yard and entrance to the prison were parked, the guards' kitchen, mess hall, and club room were repaired and remodeled. An electric-signal system was installed and gate guard's iron cage manufactured and set in place between gates 3 and 4. A ventilator was made and installed over roof of silver shop.

In addition to the foregoing were the usual minor repairs to buildings and grounds.

RELIGIOUS FUNCTIONS.

The religious needs of the prisoners have been attended to by the two regular chaplains and many volunteers of the various denominations.

A great many of the prisoners profess the Catholic faith; some the Protestant, and some none. All prisoners are allowed religious privileges.

The reports of the two regular chaplains are attached hereto. No record has been kept of the work of volunteer religious workers.

HEALTH.

The report of the prison physician, who represents the bureau of health, has been submitted to the director of health, to be embodied in his annual report.

INDUSTRIAL DIVISION.

The report of the chief of the industrial division is transmitted herewith (see page 881).

IWAHIG PENAL COLONY.

The report of the superintendent of Iwahig Penal Colony is hereto attached. Aside from what the superintendent says in his report I desire to state that the progress at the colony, in experimental work especially, has been very marked, and the results accomplished will prove of inestimable value with reference to the variety of crops, to which the most attention will, no doubt, hereafter be given.

A recent inspection trip to the colony was most interesting. Considerable attention has been given to beautifying the reservation with a view to making it attractive as a place of residence. Many of the colonists have been placed in positions of trust and a general interest has been awakened among them toward making the colony the success intended. A spirit of rivalry is noticeably manifest among the prisoners at Bilibid Prison to excel in good behavior in order to gain selection for transfer to the colony.

It is believed that during the coming year all commissary supplies for the colonists will be provided at the colony and that it will not be necessary to

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draw on Bilibid as heretofore. It is hoped that, by the end of the year, the revenue from colony products will cover the entire cost of maintenance of the colonist population.

The changes in the colonist population during the year just closing are as follows:

June 30, 1907		473
Transferred to Iwahig		162
Escaped prisoners captured at Iwahig		2
		637
Returned from Iwahig	142	
Died at Iwahig	5	
Released at Iwahig	12	
		159
At Iwahig June 30, 1908		478

PROVINCIAL PRISONS.

Progress has been made toward establishing uniformity of imprisonment throughout the provinces. Monthly reports are received showing the prison population; length of sentence of each prisoner; classification regarding race, sex, and whether adult or juvenile; all changes since the last report, with the cause therefor. In case escapes are reported, investigation is immediately made by the writer, through the provincial governor, to learn how it was possible for the escape to occur, what steps have been taken to punish those responsible for its occurrence, and what steps have been taken to prevent additional ones.

It has been the endeavor to impress upon the provincial authorities the necessity for uniformity in executing the orders of the court with dignity regarding imprisonment, not only for the effect on the prison population but on the population at large as well; that in order to accomplish this the rules and regulations must be invariably observed; that prisoners must be treated in a firm though kindly manner, it always being kept in mind that the prisoner is a human being and must be treated as such, and that it is of first importance that he shall desire to become a law-abiding and useful citizen; that he shall be sufficiently fed with good, wholesome food and trained to habits of industry and cleanliness; that he gain respect for his guardians and himself, and that his daily life be so ordered that his work, recreation, study, and rest will each be in its proper proportion.

All of the provincial prison officials have been provided, through the provincial governors, with instructions, rules, and regulations for the government of prisoners, and many of the provincial prison wardens have been sent to Bilibid Prison for a course of instruction and training. A manual of prison work is in course of preparation for distribution to all provincial prison officials, which will undoubtedly be of invaluable assistance in bringing about uniformity in the care and treatment of prisoners and prison administration throughout the islands.

A notable instance of improvement in provincial prison management is that of the prison in Laguna Province. Within the last year it has been made a model of its kind, a splendid example of what can be done by a proper application of instructions on the subject.

Bulacan Province has also shown marked improvement in the administration of its prison, an employee of Bilibid Prison having been loaned that province as prison warden.

Plans of a model prison have been prepared and distributed to provinces making application for them. The Province of Pampanga is arranging to build a new prison after the plans submitted, and several other provinces are indicating a desire to build a new prison. Many of the provinces are sadly in need of a new prison, but in most cases accomplishment is prevented for the present owing to lack of funds.

The general tendency on the part of provincial officials to cooperate with the director of prisons in bringing about a more satisfactory state of provincial prison affairs is encouraging.

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PRISON STOCKADE, CAMP AVERY.

Since January 28, 1908, 674 prisoners have been transferred to the prison stockade at Camp Avery, and 29 have been returned therefrom to Bilibid Prison because of sickness for release, etc., 6 having escaped (3 captured), leaving on hand this date 639.

The prisoners are confined in a barbed wire double stockade, and are guarded by United States Army scouts, an employee of Bilibid Prison being loaned as overseer, whose salary, together with that of an American assistant, being paid by the military authorities. The prisoners are quartered in buildings, the sanitation being good.

The arrangement with the military authorities is that the bureau of prisons is to furnish the rations and clothing, and the military authorities the transportation of prisoners and supplies and medical attendance and to assume the responsibility of guarding the prisoners.

At the time the arrangements were being made for using prison labor at Camp Avery it was understood that a stockade the same as the one at Fort McKinley was to be provided. After the escape on June 25, the writer visited the stockade and conferred with the commanding officer with reference to a more complete copying of the prison stockade at McKinley and also suggested some additional safeguards.

MALOLOS.

On November 25, 1907, 47 prisoners were transferred from Bilibid Prison to the provincial prison at Malolos, and on January 25 and May 4, 1908, 9 and 48, respectively, the total number of prisoners transferred being 116. Several transfers have been necessary on account of sickness and release from imprisonment and to replace those returned. The total number of Bilibid prisoners at Malolos on June 30, 1908, is 88, including 12 that were on hand June 30, 1907.

The arrangement with the provincial authorities is that the province shall furnish transportation, food, and clothing and be responsible for the guarding of the prisoners, the bureau of prisons to be at no expense on account of the prisoners so transferred for labor on public works from the time they leave Bilibid Prison until their return to that prison.

LAGUNA.

During this year there have been transferred to the province of Laguna 308 prisoners, together with the 200 which it had on hand June 30, 1907, making a total of 508. Of these 265 have been returned, 20 have died, and 1 escaped, leaving 222 on hand June 30, 1908, which it is expected will be returned within the next 10 days.

LEYTE.

There have been transferred to the province of Leyte for public work 40 prisoners, 8 of whom have been returned, leaving 32 still in the charge of that province.

SAMAR.

Two Bilibid prisoners of the number transferred, mention of which was made in a former annual report, still remain in the charge of the provincial authorities of Samar.

SANTO DOMINGO.

On June 5, 1908, 20 prisoners were transferred by authority of the governor-general from Bilibid Prison to the constabulary authorities at Santo Domingo for labor on public works.

CALABIAN.

The number of Bilibid prisoners being retained at Calarian Prison as instructors in industrial work is 6, one having completed his sentence and been released since the last annual report.

LUNETA POLICE STATION.

There are 21 Bilibid prisoners at the Luneta police station of the 25 authorized transferred there for work. The maximum number authorized is usually maintained, any temporary reduction during the year being due to expiration

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of sentence, sickness, or pardon, necessitating the return of those affected to Bilibid.

HOSPICIO DE SAN JOSÉ.

There are confined in the insane ward at the Hospicio de San José 6 Bilibid prisoners, and in the reformatory ward for juveniles 7, making the total number of Bilibid prisoners at the Hospicio de San José 13.

SAN LAZARO HOSPITAL.

The prisoners confined in San Lazaro Hospital June 30, 1908, were 69 insane and 2 lepers, making a total of 71.

STATISTICS.

There are submitted herewith a number of tabulated statements and tables showing the workings of the various divisions of this bureau.[a]

GEO. N. WOLFE,
Director of Prisons.

The SECRETARY OF PUBLIC INSTRUCTION,
Manila, P. I.

CHAPLAIN, BILIBID PRISON,
Manila, July, 1908.

SIR: I have the honor to submit the following report of my work as chaplain of the presidio since my appointment to that office, January 2, 1908.

Services have been held for the prisoners every Sunday morning at 6.30. The average attendance is, I judge, from 800 to 1,000. The native choir which I organized among the men, and the sermon in the native language, account in a measure for the increase in attendance.

On Sunday afternoons services are held by a corps of five native clerics whose expenses I pay. They work under my direction and preach in the better known dialects, Tagalog, Ilocano, etc. On several occasions I have brought to the presidio Jesuit missionaries who happened to be passing through the city, to preach in Visayan. When not engaged with the natives on Sunday afternoons I give a talk to a few Americans.

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[a] Tabular statements showing the following data have been omitted and filed in the Bureau of Insular Affairs, War Department:

Annual operation by departments for fiscal year ended June 30, 1908, of the industrial division.

Comparative sales for fiscal years 1907 and 1908, industrial division.

Financial for fiscal year July 1, 1907, to June 30, 1908, industrial division.

Income and expense for fiscal year 1908, prison division.

Receipts and expenditures on account of the Iwahig Penal Colony for the fiscal year 1908.

Financial statement for the fiscal year 1908, bureau of prisons.

Amounts, values, and distributions of subsistence supplies, the number of rations, and cost per ration for the fiscal year ended June 30, 1908.

Condition of prisoners' deposit fund: Amount on hand July 1, 1907, amounts received and expended during the year, and balance on hand June 30, 1908.

Bilibid Prison, showing daily count of prisoners during fiscal year ended June 30, 1908; sex and changes in prison population during fiscal year ended June 30, 1908; changes in population of prison relative to length of sentence of prisoners in confinement on July 1, 1907, and those received during the fiscal year ended June 30, 1908, and changes in prison population, relative to court by which prisoners were committted for fiscal year ended June 30, 1908.

Bilibid Prison, showing changes in population relative to crimes for which commitments were made.

Bilibid Prison, showing occupation prior to commitment, nativity, number of times convicted, domestic relations, and age of prisoners in fiscal year ended June 30, 1908.

Showing number of convicts punished during fiscal year ended June 30, 1908.

Bilibid Prison, showing education of prisoners in confinement therein June 30, 1908.

Statement of work performed by identification section.

Showing number of prisoners in provincial prisons June 30, 1908.

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Reading matter—books, magazines, and newspapers—in English, Spanish, and the dialects have been furnished the prisoners on an average of about 30 copies a week.

During the past half year I have given two stereoptican lectures to the Americans. The entertainment, given on my invitation by Mr. Carter, was greatly appreciated by the prisoners. The custom I began of soliciting cigars and cigarettes for the prisoners on the greater national holidays is still continued. The last distribution amounted to about 2,000 cigars and 60,000 cigarettes.

I visit the sick in the hospital of Bilibid and in Hospital B on an average of three times a week for both institutions. Occasionally when prisoners were removed to San Lazaro for cholera or smallpox, I have visited them there, and even daily while their condition was dangerous.

I have put an organ in Hospital B for my Sunday morning services. Up to the present I have held services there but a few times; hereafter they will be held two or three times a month, on the conclusion of the morning service in the presidio.

With one exception, having been prevented by illness, I have attended all the executions held in the prison since January last. On the day previous to the execution, as well as on the day itself, I have always brought one or two Jesuit fathers who understood the language of the condemned.

Respectfully submitted.

PHILIP M. FINEGAN, S. J.,
Chaplain of the Presidio Department.

The DIRECTOR OF PRISONS,
Manila, P. I.

CHAPLAIN, BILIBID PRISON,
Manila, P. I., July 7, 1908.

SIR: I have the honor to submit the following report, relative to religious functions carried on in this prison during the fiscal year ended June 30, 1908:

Church services	65
Sermons, or instructions	48
Visits to Hospitals A and B	145
Baptisms	2
Burial services	86
Confessions of the condemned	17
Religious confessions	28
Confessions made by the sick	64
Communion services	20
Extreme unctions	46

Very respectfully,

LEONCIO DEL ROSARIO,
Chaplain of the Carcel Department.

The DIRECTOR OF PRISONS,
Manila, P. I.

BUREAU OF PRISONS,
INDUSTRIAL DIVISION,
Manila, P. I., July 10, 1908.

SIR: I have the honor to submit herewith the first annual report of the industrial division of the bureau of prisons, under the provisions of Act No. 1679 of the Philippine Commission, for the year ended June 30, 1908.

There have been employed in the shops 894 prisoners, learning the various trades, with gratifying results as to their efficiency, and many of them are becoming expert workmen and upon their release will be qualified to earn their living in useful occupations.

The new accounting system installed the latter part of the fiscal year 1907 has been in effect, and by its use any item of expense on any part of the work can be ascertained at any time.

Attention is invited to the accompanying statements showing in detail the cost of operation of the various departments. Also a detailed monthly statement of sales and the financial statement of the industrial division. [a]

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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An analysis of these statements will show that the total production for the past year amounted to ₱405,399.03 and the total cost of operation to ₱354,464.63, leaving a net profit of ₱50,934.40.

Of the above production ₱132,833.10 was for the bureau of prisons, ₱223,796.45 for the insular government, and ₱48,769.48 for the general public.

Of the work done for the public ₱28,592.90 were for sea grass furniture, which is made entirely of Philippine products and is not competitive work, as there is no other manufactory of this class of goods in the islands.

This left, therefore, but ₱20,166.58 that could in any way be classed as competitive work.

In addition to the net profit of ₱50,934.40 on operation, the government received a further profit of ₱64,236.08 paid to the bureau of prisons for prison labor during the past year.

The statement of monthly sales shows that they amounted to ₱271,273.27, an increase over the preceding year of ₱156,178.08, a gain of 135 per cent. A large part of this gain was due to the great increase in government work by the transfer of the city shops to this division.

The financial statement shows that the industrial division began the fiscal year with net cash assets amounting to ₱93,961.40 and that on June 30, 1908, they amounted to ₱153,920.45, a net increase during the year financially of ₱59,959.05.

Respectfully submitted.

M. L. STEWART,
Assistant Director of Prisons, in Charge Industrial Division.

The SECRETARY OF PUBLIC INSTRUCTION,
Manila, P. I.
(Through the director of prisons.)

IWAHIG PENAL COLONY,
Iwahig, Palawan, P. I., July 22, 1908.

SIR: I have the honor to submit the following report covering the period July 1, 1907, to June 30, 1908.

In the beginning it is thought that a chronological list of some events at the colony since its inception will not be without interest.[a]

The following table shows movements of colonists from beginning of colony November 16, 1904, to June 30, 1908:

Colonists received	1,049
Colonists died	134
Liberated by expiration of sentence	329
Returned to Bilibid for confinement, account bad conduct	97
Escaped, fate unknown (all prior to 1906)	23
Present June 30, 1908	466
Total	1,049

116 of deaths were prior to January 1, 1907.

The following table shows movements of colonists for fiscal year June 30, 1908:

Colonists present July 1, 1907	467
Received during year	162
Captured at colony	2
Total	631
Died	4
Left colony for year 1908, to return to Bilibid	149
Released at colony	12
Escaped or fate unknown	0
Present June 30, 1908	466
Total	631

[a] Omitted and filed in Bureau of Insular Affairs, War Department.

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The following table shows the number of colonists in each release period, counting good conduct time: [a]

The following table shows distributions of colonists by races: [a]

The colonists come from the following provinces: [a]

Their connubial status was as follows: [a]

The following tables show the employments the colonists were engaged in before imprisonment, crimes for which imprisoned, and ages: [a]

The results attained during the past year will now be considered by divisions, of which there are 9: Farming, construction, forestry, roads, transportation, serving, executive, health, and out stations.

The following table shows the number of colonists employed in the various divisions on June 30, 1908: [a]

FARMING DIVISION.

The farming division is subdivided into three departments: A, permanent plantations; B, quick-return crops; and C, ornamental plants and gardens.[b]

DEPARTMENT A.

Permanent plantations.—On June 30, 1908, there were on the home farm 37.5 hectares (93¾ acres) planted out in permanent plantations.

Beside the permanent plantations on the home farm there are 29 hectares (72.5 acres) of permanent plantations in the out stations, which are referred to under that heading, making a grand total of 66.5 hectares (166.25 acres) of permanent plantations in the colony.

There are 18.25 hectares (45.625 acres) already cleared, most stumps removed, plowed and planted where necessary with shade trees, awaiting favorable opportunity for putting out cacao, kapok, etc.[c]

DEPARTMENT C.

Ornamental plants and gardens.—Considerable progress has been made in beautifying the colony. The plaza is a large lawn, kept rolled and mown; there are smaller lawns around and between houses, while the surroundings of headquarters and all the houses possess gardens in which cannae, hibiscus, crotons, sunflowers, and a score of Philippine and foreign flowers are flourishing.

The roads are bordered with either rain trees (*Pithecolobium Saman Benth*), acacias (*Cassia fistula*) or coco palms and will later be fine avenues. Many of the rain trees are now 15 to 20 feet high.

In January, 1908, Mr. Hanley was sent on trip to Zamboanga and Manila, from which he returned with many seeds and cuttings of ornamental and useful plants.

In February Governor Miller returned from the Federated Malay States and Java, bringing with him a large variety of plants and seeds, most of which were given to the colony for propagation.

Seeds and cuttings of the greater number of Philippine plants and flowers have been procured and are either set out or are in beds.

When the different palms and trees have a year of two's growth it is believed that Iwahig will be one of the most ornamental places in the Philippines.

Summing up the whole work of the farming divisions it may be said that substantial progress has been made and that the mistakes were almost necessary to attain final success. The empirical period at Iwahig has passed and future plantings can be made with assurance of satisfactory results. There seems no room for doubt that the colony can be placed on a paying basis through the cultivation of cacao, coffee, kapok, cocos, tobacco, etc., while sufficient cereals may presently be grown; and this with vegetables and meat from the stock farm should practically subsist the colony.

One point always to be remembered is that the land at Iwahig is very patchy, rich, and loose in places, but with large areas of hard, shallow, clayey soil suited to few crops. It is therefore necessary to go slowly and restrain one's

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

[b] The greater part of A and all of B have been omitted and filed in the Bureau of Insular Affairs, War Department.

[c] An extended report on the crops raised has been omitted and filed in the Bureau of Insular Affairs, War Department.

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initial enthusiasm when figures, based on climate, soil, and experience in other countries, would seem to show that no time should be lost in putting out at the colony large areas of certain crops.

DIVISION OF OUT STATIONS.

With the objects of providing homes for married colonists at some distance from the main dormitories, of experimenting with land, of providing fish, etc., stations have been established at Binuan, Bokana, Bolikaw, Babuyan, Laya, and Santa Teresa. Their progress will now be separately considered.

Binuan.—This was the old fishery station at the mouth of the Binuan River and was abandoned some two months ago in favor of Bokana; 2 men were left at Binuan to look after the plantations of cocos and maguey. There are 356 cocos and 3,000 maguey, all doing well. It is believed that the cultivation of cocos and maguey may gradually be extended along the beach between Binuan and Bokana.

Bokana.—This station is on an island at the mouth of the Iwahig River and looks out across the bay to Puerto Princesa, distant 2 miles. Here are stationed 6 men who are fishing for the colony. The fish are caught in "baclad" (bamboo corral) and in "bobones" (traps sunk in deep water). A red light is here kept burning to show the channel through the mud flats. There is a good wharf, and the station serves as a connecting link with Puerto Princesa. A telephone line down the river connects with Iwahig and notice is given from Bokana of the arrival of a steamer an hour before she enters the harbor—a great convenience. There are planted here 70 cocos and 250 maguey.

Bolikaw.—Is on the opposite side of the Iwahig River from headquarters. It contains 3 married families and 4 single colonists who are expecting their families or desire to cultivate land and remain in the colony on discharge. There are about 3 hectares (7.50 acres) in upland palay, 176 cacao plants, 340 coffee, 368 cocos, 164 papayas, 320 kapok, 309 bananas, with many other fruits and vegetables.

Babuyan.—The pig pens between Bolikaw and Santa Teresa, and 3 men are stationed here to care for the pigs.

Santa Teresa.—Is on the banks of the Iwahig River, 1,700 meters in an air line from headquarters but about 3½ kilometers by the river. There are 5 married couples and 2 men getting tuba from the nipa palms for yeast. There are about 1½ hectares (3.75 acres) in upland palay; 340 cacao, 288 coffee, 702 cocos, 65 nangkas, 150 papayas, 530 kapok, 520 bananas, 46 pineapples, with miscellaneous fruits and vegetables. A considerable area is under corn.

Laya.—At this station, 1 mile south of headquarters, are 9 married couples. They have this year about 3 hectares (7.50 acres) in upland palay. There are 726 cacao, 1,809 coffee, 393 cocos, 200 papayas, 350 bananas, 1,246 kapok, 50 pineapples, with miscellaneous fruits and vegetables. The cacao and coffee are not doing well, as the soil is poor and rocky. Unless kapok or other crops succeed here it may, despite the work already done, be advisable to move the whole station to better ground.

Kabulbug.—Here are stationed 13 men, who are working land on the "aparcero" system. The station has not passed the experimental stage, though several of the men have made great progress. There are about 3 hectares (7.50 acres) under upland palay; 1,231 cacao plants, 363 coffee, 2,895 cocos, 1,889 kapok, 500 bananas, 200 papayas, with assorted fruits and vegetables.

The station of Tagbuni and Mangyan have been dropped from the "outstation division," the former being abandoned and the cattle transferred to Mangyan, which is now a part of the home farm.

FAMILIES.

There are now 20 families at the colony, but it is several months since any woman has arrived. In June, 1908, Assistant Overseer Catalino Vergara proceeded to Manila and thence to different points in Rizal, Laguna, Batangas, Bulacan, and Pangasinan provinces, visiting families of colonists. It is unfortunately true that in most cases the sentence of a husband to imprisonment of any length is looked upon by the wife as equivalent to a divorce. Unless it will be possible to have husband and wife sent to the colony together soon after the former's imprisonment, there will be few cases in which their junction here will be possible; and for many reasons it would seem inadvisable to send a prisoner here without prior detention in Bilibid.

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CONSTRUCTION DIVISION.[a]

Construction has been almost entirely of first or second grade lumber, palma brava, bejuco, and nipa. The only materials used which are not of colony production are paints, oils, with nails, hinges, and other small fittings.

The lumber is sawn by hand from logs cut while clearing land and within 400 yards of the plaza.

Old buildings have been remodeled or torn down and those put up during the year or now being built are of hard-wood posts and beams, wooden floors, latticed nipa and palma brava walls, sliding windows in hard-wood frames, and close-laid nipa roofs. Such buildings have a life of at least ten to fifteen years and serve every present purpose. In an appendix [b] to this report will be found a detailed list of construction, but special attention is invited to the new commissary, office, general store, and quarters, school, band stand, Bokana house and wharf, 5 Santa Teresa houses, and casco.

The casco was planned and built entirely under the direction of Colonist Nicolas Ignacio, an old Bicol, who had some experience in building prahus and small schooners. It was launched on June 20 and proved a great success, as it tows easily and will hold about 40 tons of miscellaneous cargo, and may be valued at ₱1,500.

The kitchen and bake shop were remodeled and given cement floors. They are now models of cleanliness and neatness.

A total of ₱15,554.37 worth of outside construction was done during the year.

A great deal of furniture has been turned out during the year; in fact, the whole colony has been fairly well equipped. Office file cases, tables, chairs, aparadores, beds, etc., etc., are now in every building.

A total value of ₱4,606.56 worth of furniture and other supplies was made in the carpenter and other shops.

The construction work done on culverts and bridges will be noted under "Roads division."

It has not been deemed advisable to begin construction of concrete warehouses and buildings. Such work should not be begun until the reservation is still further opened up, roads and embankments built, more land farmed, and the sites for permanent construction thoroughly surveyed and examined from topographical and economical standpoints.

Appendix D attached gives detailed statement of construction.[b]

FORESTRY DIVISION.[c]

About 25 hectares (62.50 acres) of virgin forest have been cut down and partially cleared during the past year. Hundreds of logs have been hauled from the forests and large quantities of bejuco, palma brava, nipa, bamboo, poles, etc., have been brought in and prepared for construction work. Three large work sheds (each 50 by 40 feet) are devoted to sawyers and others preparing forest material.

There have been felled and sawn into lumber 57 varieties of trees, of which 18 have been identified.

A careful list has been kept of all trees cut down, samples of wood, leaves, flowers, and bark being filed and sent to the bureau of forestry for identification. Our most useful and used woods are ipil, gatasan, apitong or hagachac, dalinsin, and camagon; others identified and used during the year were sacat, nato, amuguis, liusin, banaba, tui, antipolo, bancal, malasantol, cupang, etc.

During the year the virgin forest west of headquarters was cut down for about 150 meters farther back and for a total length of 1,000 meters between Mangahan and Sugod. This should still be extended for about 200 meters farther, the forest being cut down and burned and land cultivated as a sanitary measure.

The swamp between Mangahan and the main road, an area of about 3½ hectares (8.75 acres), was cleared. The best timber will be taken out and the

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[a] A table showing the number of men in this division and their employment has been omitted and filed in the Bureau of Insular Affairs, War Department.

[b] Omitted and filed in the Bureau of Insular Affairs, War Department.

[c] The number of men and their employments is shown in a table which has been omitted and filed in the Bureau of Insular Affairs, War Department.

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brush burned. A lake may be made of this swamp or a part of it; the rest being reclaimed and cultivated.

At Kabulbug and Santa Teresa about 6 hectares (15 acres) of virgin and second-growth forests were cleared and put in palay by the families of those places. A total value of ₱15,232.53 worth of forest products was brought in and worked up.

Attached Appendix A is a copy of the Iwahig order governing forestry work.[a]

Appendix C, attached, shows forestry work in detail.[a]

TRANSPORTATION DIVISION.[b]

During the past year we have had the occasional use of the gasoline launch *Lieut. Kiely* and the steam launch *Moro*, both held on memorandum receipt from the bureau of navigation. They have now been returned, both having broken down beyond repair. The *Pulajan* and *Apoy* give splendid service and will handle the colony water transportation for some time to come, when they should be replaced by a stern-wheel steamer.

ROADS DIVISION.[c]

The principal work of this division has been the repair and upkeep of existing roads. There are now 3.675 kilometers of metalled broken stone road, 1.550 kilometers of dirt and gravel road, and 4.750 kilometers of 6-foot graded and culverted trail; the latter having been built during the year.

Other work done by this division was cutting 2,700 feet of irrigation canal at Mangyan, part of it being a 12-foot cut through rock conglomerate; filling and draining swamp lands; digging cesspits; building one concrete bridge and strengthening main drainage canal; building and repairing bridges, culverts, etc.

A drainage canal from 2 to 8 feet deep and from 4 to 10 feet wide was cut from the stables through the lower home farm for over 500 meters.

A 6-foot bridle trail graded, ditched, and with culverts was constructed from Santa Teresa to Laya and Kabulbug, connecting up all the stations on the other side of the river, a total length of 4.300 kilometers.

Newly arrived colonists are usually placed in this division and drafted gradually to farming and other work.

SERVING DIVISION.[c]

The installation of a water system will enable considerable reduction in the number of men employed at menial work. At present for every house or kitchen drinking water must be carried from the Sugud Creek, several hundred yards distant, and cooking water from the Iwahig River. Firewood is cut by servants of the respective houses or kitchens.

EXECUTIVE DIVISION.[c]

This is the administration division and its duties are varied, comprising all office and accounting work, receipt and issue of all supplies and commissaries, records of men, etc. A good system of accounting is now in force and accurate check is had of all expenditures and receipts. A very encouraging feature has been the care taken of property by the colonists. Nothing has been stolen and very little lost.

HEALTH DIVISION.[c]

The general health of the colony has been excellent. The prevailing disease is malaria, which accounted for 50.26 per cent of cases. There is no dysentery and no beriberi, those two especial curses of most new camps in a tropical jungle. As more land is cleared and drained, malaria is steadily diminishing. Beriberi, which was rife at the colony in 1905–6, was easily eliminated by change of ration, burning of infected buildings, and draining or filling of damp places. Dysentery, which was also a scourge, has been long abolished by re-

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

[b] A table showing the number of men and their employments, as well as means of land and water transportation, has been omitted and filed in the Bureau of Insular Affairs, War Department.

[c] A table showing the number of men in this division and their employments has been omitted and filed in the Bureau of Insular Affairs, War Department.

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moving the cesspits to 200 yards from the kitchen and keeping them screened from flies, together with the daily collection and burning of all garbage. The cesspits in 1906 were festering sores, wide open, and about 50 feet from main kitchen.

By weighing newly arrived prisoners and reweighing them after three months and six months at the colony it has been found that the average gain in weight per man is 2½ pounds; this despite hard work in the open air and that new arrivals generally suffer from malaria.[a]

Special attention is invited to the drop in the death rate from 261 per 1,000 in 1905 and 116 per 1,000 in 1906 to 25 per 1,000 in 1907 and 8.6 per 1,000 in 1908.

A corresponding reduction in the percentage of sick may be noted from 1906, when from 20 to 30 per cent of the men were daily sick in hospital to at present, when 3.74 per cent are sick, and it frequently drops to below 2 per cent.

SUBSISTENCE.

Slowly but steadily home-grown products are replacing imported rations. Corn, which has been grown well here, is ground into meal and mixed with rice ration. This year a considerable crop may be expected from irrigation and upland palay, and a small, water-driven mill will be installed to hull out the rice. On a rough estimate it may be said that at least 50,000 pounds of rice will be produced this year, which is about three months' supply for the colony. Very possibly, with the extension of paddies and good crop, the above estimate will be more than doubled.

For some time we were able to kill beef twice weekly. This is a great economy over canned meats, of which our usage is steadily diminishing.

We have not been very successful in getting fish from the station at Binuan. Lately this station has been transferred to Bokana and, under closer supervision and with new traps, better results may be expected. Some dried fish have been purchased in the local market, and as they are a great economy an extension of these purchases is being attempted.

All our lard and a considerable quantity of pork is received from our own piggery.

The following table shows the gradual reduction in consumption of canned meats, etc., from Manila:

	Canned corned beef.	Canned salmon.	Bacon.	Fresh meat.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*
August, 1906	3,942	2,337	.....	1,052
December, 1906	3,224	1,066	79½	1,038½
April, 1907	2,010	1,229	341½	1,637½
August, 1907	1,034	766	75	3,118
December, 1907	320	887	511	3,657
June, 1908	750	381	948	2,649½

The colony strength in the above period has varied only slightly.

The staples of ration have been rice, bread, corn and cornmeal, fresh meat, sugar, coffee, fresh and dried fish, camotes, sweet potatoes, gabis, papayas, calabazas, eggplants, and other vegetables.

An increasing variety of food is being produced on the farm, which constantly tends to improve this ration.

The average daily cost of ration per man for the whole year was:

With colony products taken up at market value	₱0.178350
Without colony products	.143113
Average daily weight, in ounces, of food per man	50.785205

The following table shows the ration distribution in more detail.[b]

Very poor success has been had with breeding cattle. Out of 22 calves born during the year 16 died at or soon after birth. The breeding corral has now been changed from Tagbuni to Mangyan. A large corral at Mangyan on both

[a] A table showing health statistics and mortality has been omitted and filed in the Bureau of Insular Affairs, War Department.

[b] Omitted and filed in the Bureau of Insular Affairs, War Department.

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sides of the river has been fenced with barbed wire and this may improve the situation.

The piggery has been very successful. Fifty-nine porkers were born during the year; 32 pigs have been killed for food and lard, and 12 have been given to families to breed and care for.

There are now 24 young turkeys hatched at the colony and doing well; also there are 10 ducks. These will be distributed to the different families.

WEATHER.

A careful meteorological record is kept. The following table shows the monthly averages of temperature, barometrical pressures, and rain for the past year.[a]

There was no pronounced dry season in 1908, April being the only month in which heavy rains did not fall.

The climate of Iwahig is on the whole good. The nights are always several degrees cooler than on the bay, a few miles distant, while the days are rarely excessively hot.

CONDUCT OF COLONISTS AND DISCIPLINE.

The general conduct of the men has been excellent. No serious crime was committed during the year. Nine prisoners were returned to Bilibid for continued bad conduct or untrustworthiness. There were only 3 crimes committed, with 225 cases of infractions of orders or discipline. As will be seen by the following table, the majority of cases tried were of a very minor order.[a]

Colonists are divided into squads of about 25 men each. A foreman, or capataz, is in charge of each squad, while a chief foreman and an assistant chief foreman supervise all squads and are responsible direct to the superintendent for the interior discipline of the colony. This includes the checking and counting of men by squads at the formations of reveille, work calls, meal calls, retreat, and check roll call at 9 p. m.; the records of clothes and personal equipment of the men; the policing and care of quarters and other buildings, etc.

Since authority was obtained in November, 1907, to pay the foreman and other colonists in responsible positions small gratuities, a great improvement has been noticeable in discipline. There are still venal or timid foremen, but the reports made against their fellow-colonists for breaches of orders, etc., have shown increased sense of responsibility animating those colonists who are in authority.

As far as possible squads are grouped with a view to the distribution of men in the work division; but the work is entirely separated from the interior discipline of the colony and the chiefs of work divisions are chosen from among the assistant overseers or the colonists. An opportunity is given to every colonist to work up from fourth-class colonist through the different grades to squad foreman and, in cases of exceptional ability, to division chief.

This brings up the subject of division of colonists in grades, which are as follows:

5th-class colonists.	Skilled workmen.
4th-class colonists.	Assistant squad foreman.
3d-class colonists.	Squad foreman.
2d-class colonists.	Assistant chief foreman.
1st-class colonists.	Chief foreman.

The distinctions between grades and various privileges are shown in the appendix to this report.[a] Further division may later be necessary as more money is available for gratuities or uniforms improved and extended.

All visitors to the colony have noted the work of the colonists, and it is the general consensus of opinion that the men work as well or better than ordinary paid laborers. This statement leads to consideration under a separate heading of the principles on which the colony is administered.

PRINCIPLES OF THE COLONY.

The objects of the Iwahig penal colony are presumed to be dual—to relieve the congested condition of Bilibid Prison and to offer to convicts an opportunity for rehabilitation. If, in carrying out this plan, the government can, at com-

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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paratively small expense, become possessed of a profitable hacienda, while hundreds of Filipinos are taught improved habits of farming and industry, a great deal will have been accomplished.

After some uncertainty during the first years of the colony's institution, it has now been decided that prisoners should be sent to it only after a preparatory confinement varying from one-third of sentence, in case of short term men, to three-fourths or more of sentence in case of long term men; life or very long sentence men to be sent only on account of old age or with their families. No prisoners who have committed heinous crimes or who are recidivists to be sent, while all must have earned high good-conduct records at Bilibid.

As the chief object of penal treatment is to accomplish the reform of the prisoner while deterring others from crime, it would seem that this colony may well occupy a prominent place in the insular prison scheme. It is realized that jail must be made a very real and awful thing to the criminal classes, and the ameliorations of prison life must never be such as to publicly palliate crime. The long detention period in Bilibid, where the offender is habituated to habits of industry and discipline, is believed to be a sufficient deterrent; while for the common run of culprits a year or two at Iwahig in a semifree, hard-working, and disciplined agricultural community should have and does have an excellent moral and physical effect. Observation has shown that time-expired men leave here thoroughly rehabilitated and ready to take up the duties of citizenship once more.

Consequent upon the unsettled status of the colony in its earlier days there are a number of life and long sentence men now there. Some few of these have married and settled down at the colony; many were confined for post-insurrectionary offenses and are gradually being pardoned by the executive. Those who are not embraced in the above two classes should, it is believed, be later given special consideration after some length of service at the colony, especially as most of them were among the pioneers at Iwahig and suffered from the terribly unhealthy condition of the same at that time.

The question of the actual control of several hundred convicts without guards or other than moral restraints must rest upon certain basic principles, which to the writer seem the following:

1. Absolute and unquestioned authority of the superintendent over all prisoners and employees, with the power to return the former to Bilibid or to discharge the latter.

2. Considerate and sympathetic treatment of the Filipino employees and prisoners, encouraging them to do their best work by patient explanation rather than by hurried driving, but letting it be very apparent to all that patience and consideration are not synonymous with weakness.

3. The building up of the authority of Filipino assistant overseers and prisoner foremen, and through them controlling the bulk of the prisoners.

Important features making for control by the above methods are the good-conduct time to be gained, the possibility of return to Bilibid, the absence of firearms at the colony, the practical impossibility of escape from Palawan, and the presence of troops at Puerto Princesa, a few miles away.

That the present method of administration is feasible would seem to be fairly well proved by a record for the colony of two years without losing a prisoner and without any serious disturbance.

Attention is invited to the following appendices to this report:[a]

A. Order No. 39 of the superintendent of the Iwahig penal colony, governing forestry work.

B. Proposed rules and regulations.

C. Statement of forestry products produced at colony during year. Total value, ₱15,232.53.

D. Statement of construction work performed during year.

E. Statement of farm products during year.

F. Map of the colony (not received in Washington).

Respectfully submitted.

JOHN R. WHITE,
Superintendent Iwahig Penal Colony.

The DIRECTOR OF PRISONS,
Manila, P. I.

[a] All of these have been omitted and filed in the Bureau of Insular Affairs, War Department.

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EXHIBIT E.

REPORT OF THE ACTING DIRECTOR OF PRINTING.

DEPARTMENT OF PUBLIC INSTRUCTION,
BUREAU OF PRINTING,
Manila, August 7, 1908.

SIR: I have the honor to submit the following report of the operations of the Bureau of Printing for the fiscal year ended June 30, 1908:

On July 1, 1907, the balance of available appropriation to the credit of the bureau was ₱139,438.22. Of this amount ₱26,375.92 were a separate fund for renewals of equipment due to wear and tear. Receipts from all sources amounted to ₱479,237.55, making the total available funds for the year ₱618,675.77. Disbursements amounted to ₱469,171.01, leaving an available balance of ₱149,504.76. There were set apart for the wear and tear of equipment ₱41,891.98, being 10 per cent of the total value of that on hand July 1, 1907, less ₱33,790.47 set apart for the previous year. This increased the fund to ₱68,267.90. Of this sum ₱32,867.53 were expended, leaving ₱35,400.37 on hand. Outstanding obligations, including unfilled requisitions, orders placed, and unpaid salaries and wages (including extra compensation earned but not paid), amount to ₱86,137.74. (Table No. 1.)[a]

The value of the product of the bureau and the actual cost of producing same are shown in Table No. 2.[a] The amount of the difference is ₱73,015.95. Of this ₱72,908.25, or 14 per cent, of the charges to the insular, provincial, and city of Manila governments, were deducted as credits, and an undivided surplus of ₱107.70 has been carried over to the fiscal year 1909.

The amount paid for extra compensation to native craftsmen and apprentices, under the provisions of Acts Nos. 650, 1440, and 1679 during the fiscal year 1907 amounted to ₱6,135.40; and during the fiscal year 1908, to ₱7,481.80, an increase of ₱1,346.40.

Extra expenditures for overtime caused by heavy pressure of work were also much greater than during the fiscal year 1907. During the fiscal year 1907 extra expenditures due to such overtime work amounted to ₱1,087.10, while during the fiscal year 1908 the amount was ₱5,039.12, an increase of ₱3,952.02.

The prices of both supplies and printing paper have advanced steadily. This advance was particularly noticeable in the case of printing paper. Of sized and supercalendered book paper, 24 x 32 inches, 532½ reams, received November 12, 1906, cost the bureau of printing ₱0.08333 per pound, while 779 $\frac{1}{10}$ reams thereof, received September 25, 1907, cost ₱0.09844 per pound, an increase of 17.6 per cent. While the cost of all the 300 kinds of printing paper used has not advanced as much, it can be safely stated that the increased cost amounted to approximately ₱10,000.

Considering that the same scale of prices for printing and binding prevailed as during the fiscal year 1907, the fact that the same per cent (14) of refund was allowed for both years would indicate that increased efficiency of the plant had made possible the saving of several thousands of pesos.

Table No. 3 shows the property assets of the bureau on June 30, 1908, by inventory.[a] Deducting the value of the articles condemned, transferred, or sold, the cost of the equipment on hand on that date was ₱476,256.15; supplies, ₱45,038.77; printing paper, ₱69,401.16; stock forms, ₱36,237.54; a total of ₱626,933.62, not including the value of the public documents, Gazettes, and Journals of Science kept for sale, the estimated selling price of which amounted to ₱188,390.

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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The value of the public documents sold during the year was ₱16,970.55, credits for which, less the postage and cost of handling (₱2,224.10), were given the respective bureaus for which printed. (Table No. 4.)[a]

Records show that there are debit balances for the Official Gazette, English (₱7,286.56), Gaceta Oficial, Spanish (₱7,724.51), and the Journal of Science (₱10,435.89). The following shows the number of subscribers to these publications on June 30, 1908:

	Paid.	Free.
Official Gazette	249	120
Gaceta Oficial	892	647
Journal of Science:		
Section A	105	[a]5
Section B	121	[a]5
Section C	98	[a]5

[a] The bureau of science sent all free copies, with the exception of 5 sent to the Bureau of Insular Affairs, and also those to subscribers and agencies not prepaying. See Tables 5–7 (omitted and filed in the Bureau of Insular Affairs, War Department).

There were executed for the insular government 6,226 work orders, with a total value of ₱409,248.15; for the provincial government 7,591 orders, with a value of ₱106,072.80; for the city of Manila 481 orders, with a value of ₱12,839.80; and for the Federal Government and outside parties 1,109 orders, with a value of ₱25,364.29 (chief commissary, ₱3,362.66; United States Marine Corps, ₱280.95; United States engineer, Fort Santiago, ₱282.04; adjutant Twenty-fourth Infantry, ₱9; medical supply depot, ₱102.15; chief engineer officer, ₱81.74; Manila ordnance depot, ₱198.30; chief signal officer, ₱29.80; and Department of Commerce and Labor, Coast and Geodetic Survey, ₱6).

Credits of ₱56,260.50 were given the bureaus and offices of the insular government, ₱14,850.19 to the provincial governments, and ₱1,797.56 to the city of Manila. (Table No. 8.)[a]

The following shows the deliveries during the year:

	Number of packages.	Pounds.
By wagon	18,203	367,841
By mail	109,978	44,037
By freight	1,055	146,708
Total	129,236	558,586

During the year there was issued in one volume of 1,425 pages a compilation in English of all the acts passed by the Philippine Commission up to the inauguration of the Philippine Assembly. Volume VIII of the Philippine Reports (Supreme Court Decisions) was placed on sale, and Volumes IX and X were practically completed and will soon be on sale, bringing these important documents current.

Volume VI, Public Laws Enacted by the Philippine Commission from September 1, 1906, to October 15, 1907, was published. A compilation of all the ordinances of Manila and the city charter is nearing completion and will be ready about August 15.

The inauguration of the Philippine Legislature has increased the demands upon this bureau, principally in the publishing of the journals of the Commission and of the Assembly. The journal of the Commission for the inuagural session, in both English and Spanish, making 496 pages and 503 pages, respectively, has been issued, and work is progressing on the journal for the first and special sessions. The Assembly has not to date submitted its journal for publication.

On June 30, 1908, there were on the rolls of the bureau 78 apprentices, and 12 graduated during the year.

[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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The death of Mr. Milton E. Rouzee, foreman of the electrotyping and stereotyping division, on October 22, 1907, caused a vacancy in the administrative force of that division. No appointment was made to the vacancy, but an American craftsman-instructor of the photo-engraving division was assigned as supervisor of operations. On November 4, 1907, at the request of this office, an examination was held by the bureau of civil service in English for the position of assistant foreman, and to take charge of actual operations. Five Filipino craftsmen (all graduate apprentices) presented themselves, and all made a very creditable showing. The excellent manner in which many of the technical questions were answered indicated the thoroughness of the instruction given by the late Mr. Rouzee. Since September 16, 1907, the electrotyping and stereotyping division has been in charge of a Filipino, under supervision.

During the year an additional Filipino has been assigned to learn jacket writing (instructions for execution of work) and computing. Also a Filipino has been assigned to press revising (the O. K.'ing of forms for press) of certain forms. The property clerk and cashier of the bureau are Filipinos.

Several sets of half-tones for three-color process have been executed for the government and some for outside parties.

Numerous requests have been made during the year by outside parties for the executing of printing and binding. With the exception of photo-engraving, electrotyping, and stereotyping, these requests have been denied as being directly in competition with commercial firms.

For the Philippine carnival held at Manila February 27, 1908, to March 3, 1908, the Philippine government donated printing to the value of ₱5,000. Thousands of four-color folders in English, Spanish, Tagalog, Visayan, Bicol, and Ilocano were executed, besides the numerous small jobs incident to such an undertaking.

The Manila Merchants' Association are the recipients of a donation from the Philippine government of printing to the value of ₱25,000, the purpose being for the advertisement of the islands to the betterment of trade and industry. Payable from these funds the principal work executed during the year was 50,000 guidebooks of Manila and 25,000 pamphlets giving the possibilities of various investments in the islands.

Additional machinery was received as follows: Two double-magazine linotype machines No. 4; one Seybold book compresser; and one Chandler & Price platen press (for Baguio outfit). The machine for cutting and separating Philippine notes was transferred to this bureau by the insular treasurer.

Orders are now in the United States for one automatic-feeding folding machine, one machine for molding backs of blank books, one saw and trimmer (for electrotypes), one rotary board-cutting machine, and one index-cutting machine.

Prior to the departure of Mr. John S. Leech, former director of printing, the insular auditor sent a corps of inspectors to examine and report on the property accountability. This was in reality the first attempt at such an inspection and proved very effective. The following is from the inspectors' report:

"The card system for property in use is complete and closely adhered to, and with the numbering of the equipment assisted in expediting the checking of property."

Duly authorized, the director of education requested of this bureau the establishment of a small branch printing office at Baguio, for the purpose of printing a daily publication known as "The Teachers' Assembly Herald," during the teachers' assembly in April and May. Six Filipino employees were selected for this detail, and an American craftsman-instructor was assigned to supervise the starting of the publication. After a few days the branch was wholly operated by Filipinos. Twenty-seven issues of 4 pages each of editions of 1,700 copies were printed. Quoting from the report of the operation of the branch by the director of education:

"The efficiency and habits of these employees were exemplary, and they conducted themselves in a very satisfactory manner."

The question of the advisability of the separate maintenance of a division for the handling of the Official Gazette, Journal of Science, and all salable documents has been considered. The space now occupied by these publications and documents in the bureau will no doubt soon be required for the operation of the plant for printing and binding. Inasmuch as the income resulting from the

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10 per cent of all sales allowed for the handling of the documents is sufficient to cover the actual cost of handling, such a division would be practically self-supporting. An employee in charge of a separate division of documents can, by giving undivided attention to the handling and sales, give a more efficient service to purchasers, both official and private. The work of handling documents, etc., is being done at present by employees of the bureau in conjunction with other duties.

The welfare of the Filipino employees is at all times considered. They are systematically taught the specialties of the various trades by competent instructors. The facilities of the bureau being modern, they become acquainted with the up-to-date methods. Should graduates of this institution desire to enter the commercial field, they would have considerable advantage over those who worked in offices where the welfare of the employer was the first consideration. They are encouraged to improve their education by attending night school. Advice is given all to practice economy, and to put away a part of their earnings for a day of need. Not only is interest taken in their education, but they are shown the advantages of outdoor exercise and simple rules of hygiene.

The increase in efficiency of the Filipino employees has been quite satisfactory. The grade of the product is the best argument, and comparison with that of similar institutions is invited. Employees are instructed not to sacrifice quality for quantity. The government of the Philippine Islands is receiving a superior quality of printing and binding and economical service by the operation of this bureau.

Table A shows the scheme of organization of the bureau and the number of employees in each branch on June 30, 1908.[a]

Respectfully submitted.

J. A. HOGGSETTE,
Acting Director of Printing.

The SECRETARY OF PUBLIC INSTRUCTION,
Manila, P. I.

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[a] Omitted and filed in the Bureau of Insular Affairs, War Department.

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